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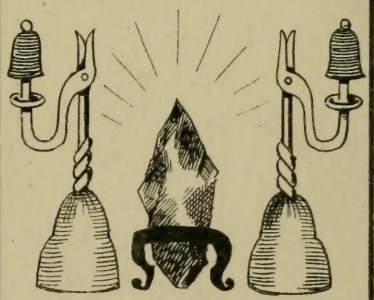
And, like a scurvy politician,
Seem to see ye things thou
Dost not—"



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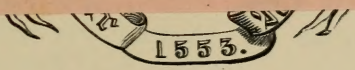

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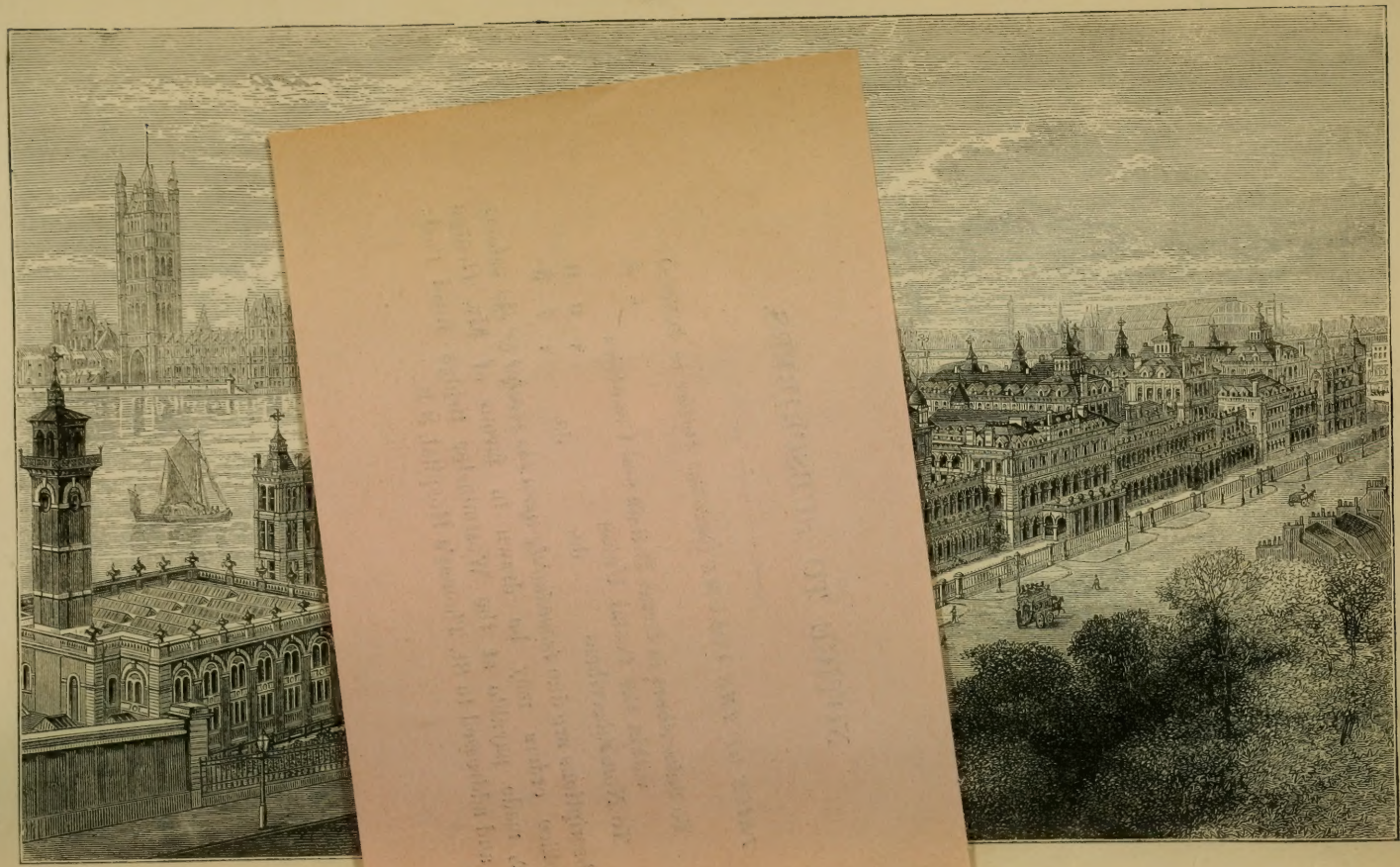

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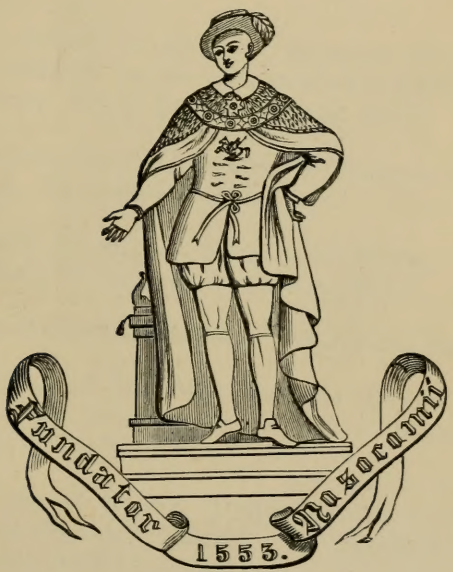

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CONTENTS.

PAGE

I. Some Records of Surgical Experience, being a Contribution to the Collective Investigation of Disease. By F. Le Gros Clark, F.R.S. . 1

II. Notes from the Laboratory of St. Thomas's Hospital. By Albert J. Bernays . . 27

III. Vegetable Growths as Purifiers of Sewage. By Alfred W. Bennett, M.A., B.Sc., F.L.S. . 39

IV. A Case of Osteitis Deformans. By John R. Lunn 43

V. The Effects of Electricity upon the Circulation, Local and General. By Walter J. Kilner, M.B., M.R.C.P. 53

VI. Two Cases of General Atrophy treated by the "Weir-Mitchell" Method. By Seymour J. Sharkey, M.B. 65

VII. Common Catarrh, Sewer Air, and Sorethroat. By Alfred Carpenter, M.D. . . . 75

VIII. A Few Cases of Broken Jaw. By Charles E. Truman 83

IX. Case of Gastro-Colic Fistula. By Walter Edmunds, M.C., F.R.C.S. . . . 91

PAGE

X. Cases of Tubercular Meningitis. By JOHN S. BRISTOWE, M.D. 97

XI. The Throat Department of St. Thomas's Hospital in 1883. By FELIX SEMON, M.D., M.R.C.P. . 125

XII. A Case of Artificial Anus treated by Resection of the Small Intestine, with some Remarks on the Method and the Results obtained by it. By G. H. MAKINS 181

XIII. Mediastino-Pericarditis in Children. By H. R. HUTTON, M.A., M.B. CANTAB. . . 211

XIV. Hammam R'Irha, a Winter Health Resort. By THOMAS D. SAVILL, M.D. Lond., M.R.C.P. . 221

XV. Cases of Ulcerative Endocarditis. By R. PERCY SMITH, M.D., M.R.C.P. . . . 231

XVI. Sketches of an Egyptian Cholera Hospital. A Personal Narrative. By THEODORE DYKE ACLAND, M.D. Oxon., M.R.C.P. . . 257

XVII. On Some Anæsthetic Apparatus. By WALTER TYRRELL 277

XVIII. Four Cases of Symmetrical Development of Fat at the Back of the Neck. By Sir WILLIAM MACCORMAC, F.R.C.S. 287

XIX. Report of the Department for Diseases of the Skin, 1883. By J. F. PAYNE, M.D. . . 299

XX. Medical Matters in Egypt. By F. M. SANDWITH . 341

XXI. Report of the Obstetrical Department for 1883. By W. A. DUNCAN, M.D. . . . 375

XXII. Medical Report, 1883. By WALTER BAUGH HADDEN, M.D. Lond., M.R.C.P. . . 385

PAGE

XXIII. Surgical Report, 1883. By William Henry Battle, F.R.C.S. . . . 441

XXIV. Statistical Report of the Ophthalmic Department for the Year 1883. By F. W. Marlow . . 513

LIST OF ILLUSTRATIONS.

PLATES.

TO FACE PAGE

I—VI. *Illustrating Mr. J. R. Lunn's Case of Osteitis Deformans* 52

VII. *Illustrating Dr. Kilner's paper on the Effects of Electricity upon the Circulation* . . . 64

WOODCUTS.

PAGE

Illustrating Mr. E. Truman's Cases of Broken Jaw.

Splint 89

Illustrating Mr. Makins' Case of Artificial Anus treated by Resection of the Small Intestine.

Provisional Clamp Forceps 189

Illustrating Dr. Percy Smith's Case of Ulcerative Endocarditis.

Sphygmographic Tracing 239

Illustrating Dr. Acland's Sketches of an Egyptian Cholera Hospital.

Sketch Map of Apex of Delta, R. Nile . . 270

Illustrating Mr. W. Tyrrell's paper on Some Anæsthetic Apparatus.

Figs. 1, 2.—Ether Chamber in Clover's Inhaler . . 279
Fig. 3.—Ether Inhaler 281
Fig. 4.—Apparatus for Prolonging the Anæsthesia of Nitrous Oxide Gas . . . 284

Illustrating Sir William MacCormac's Four Cases of Symmetrical Development of Fat at the Back of the Neck.

Fig. 1.—View from behind of the Symmetrical Fatty Tumours of W. G—'s Neck . . 288
Fig. 2.—Side view of the Tumours of ditto . . 289
Fig. 3.—Showing improvement after Operation . . 291
Fig. 4.—Showing the arrangement of the Tumours on the back of the Neck and Shoulders of T. E. W— . 292
Fig. 5.—Side view of the Tumours of ditto . . 293
Fig. 6.—Quadrilateral Fatty Tumour of the Nape of Wm. S— 295
Fig. 7.—Suboccipital Symmetrical Lipoma . . 297

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BEING A CONTRIBUTION TO THE

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(*Continued from 'St. Thomas's Hospital Reports,' N.S., Vol. XII, p. 44.*)

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In-growing nail.—Corns and warts.—Treatment of abscess. —Nævus.—Colotomy.— Carbuncle.—Erythema.—Gouty deposit on penis.—Stricture.—Pneumothorax and emphysema.—Pulse, temperature, tongue, &c.—Fractures of patella.—Hæmorrhoids: prolapse of rectum.—Contracted skin and fasciæ.—Influence of food and drink on health and longevity.—Fractures into or near joints.—Railway accidents.

In-growing nail.—This painful affection is often so troublesome to deal with that very rigorous treatment has been adopted for its cure. I think that in most cases this is unnecessary. Either side of the great toe-nail may press upon and cause ulceration of the neighbouring skin, though this is more frequent on the inner border. Except in very aggravated cases I have found pressure and glacial acetic acid accomplish all I required. The offending portion of the nail should be first pared or scraped to reduce its thickness; then a small pledget of cotton wool, wetted with the acid, is placed over the scraped nail adjoining the wound, and kept in contact with it by the application of a strip of plaster. It may be necessary to repeat this two or three times, taking away fragments of the thinned and softened nail and increasing the pressure each time. Finally, firm pressure must be made on

the hypertrophied skin, which will shrink rapidly under its use, and the foul ulcer will clean and heal. The patient must be taught how to manage himself after this, to prevent a recurrence of the mischief. I do not say that all cases will yield to this treatment, but certainly I have found it remarkably successful in many and even bad cases, and it has the advantage of being attended with comparatively little pain; indeed, the pressure, if applied at the right time, is a relief to the patient. I have usually employed a simple strip of adhesive plaster for this purpose; before renewal the foot should be soaked in warm water. The acetic acid acts by softening and thus gradually destroying the texture of the nail.

In the subsequent management of the nail it is a safeguard to notch its extremity by cutting out a V-shaped piece from the centre, the angular junction of the two sides of the notch being at a point as far removed from the free border as possible without injury to the quick or sensitive part. The foot should be previously soaked in warm water to soften the nail. This little operation will require repetition by the patient as often as the nail grows up, its effect being to relieve the lateral pressure of the nail. If it be an exostosis which drives the nail over to the opposite side, and thus initiates the mischief, of course no palliative treatment will be effective until the exostosis is removed.

For fœtid ulceration round the base of the nails strong nitric acid is required.

Corns and warts.—Whilst referring to the action of glacial acetic acid, I may notice its usefulness in corns and common warts.

In treating *corns*, after some of the surrounding indurated skin has been rubbed down, a portion of the central conical projection should be picked out, and a small drop of the acid should be deposited in the hollow and allowed to remain till it disappears. If this process be repeated a few times, the acid being applied each time after the softened centre is removed, the corn will be eradicated. Where the tender part is less circumscribed, a file or piece of pumice-stone may be used for rubbing it down before the acid is applied. The part may be protected with a piece of cotton wool in the intervals, especially when the corn is between the toes.

A soft corn is only a common corn kept soft by the confinement of the perspiration. If the feet were bathed every night in warm water and well rubbed afterwards, especially between the toes, there would be less complaint of suffering from corns than there is. Of course tight boots and shoes must be eschewed. There is an absurd popular belief that frequent bathing of the feet in warm water is debilitating: this prejudice is, I suspect, begotten of idleness, as tight boots are the offspring of vanity.

Common warts yield, without pain, to the same remedy employed in a similar way. The wart should be rubbed down with a file or a piece of pumice stone, and then a drop of the glacial acid is to be applied and allowed to soak into the warty texture. This operation should be repeated daily, or at longer intervals, until the morbid growth is eradicated. If the part can be kept covered during the treatment so much the better. Nitrate of silver is of very little use in these cases. Strong nitric acid will no doubt destroy a wart speedily, but a troublesome sore is not infrequently left by it, and its use is after a time attended by pain. The acetic acid is painless and sure, though it requires time and perseverance to destroy large warts.

Treatment of abscess.—The management of abscesses seems an elementary matter to the uninitiated, but really involves many important considerations, and requires both tact and experience. The time for opening an acute abscess must, of course, depend on many circumstances associated with locality, texture, size, cause of its existence, and condition of the patient, as all competent surgeons know. The operation may, of course, in many instances be deferred until the abscess is *ripe*, *i.e.* until the skin, if it be near the surface, has been sufficiently approached to secure a ready drainage without adventitious aid. But I think it is not infrequently delayed too long, *i.e.* until the skin has become so much thinned by absorption as to threaten its vitality and to ensure an ugly scar. As a rule, I think it better to open a circumscribed abscess—especially under the circumstances just alluded to—at the margin rather than at the most prominent point; of course it should be at the most depending part. By this arrangement better drainage is secured, and the risk of getting

an ulcerated opening and consequent scar is materially less than when the incision is made through skin of low vitality. Where there is necessary movement of a part, as in the groin, a vertical is preferable to a horizontal incision, for thereby the constant opening and closing of the wound is avoided, and the healing is not protracted, as is so commonly the case when the incision is parallel to the fold of the groin.

Premature opening of abscess of the *tonsil* is fraught with mischief. Indeed, I think the cases in which interference is desirable are exceptional; for if the matter be deeply seated the opening almost always closes again, and the suffering of the patient is prolonged. When the knife is used its blade should be carefully guarded with a piece of lint wrapped round it at a short distance from the point, which should be directed inwards. When I leave these abscesses to burst, I generally direct the patient to have the head well supported, in fact, to sleep nearly in the sitting posture; for I remember one instance which occurred when I was very young, in which a patient died suddenly from the breaking of a tonsilitic abscess, as I believe, from the rapid ingress of the pus into the trachea.

Various plans of managing large *chronic abscesses* have been recommended. Their removal by absorption of pus is a rare occurrence, therefore the question often arises as to the safest method of opening them. Inflammation of the wall of a large inactive abscess is serious, for it is attended by much constitutional disturbance. Yet this is a very common occurrence if air be admitted and the pus undergo decomposition. On the other hand, a free incision and constant drainage will induce hectic and exhaustion. I have found the safest course to be that of making a small opening, say of the breadth of a common lancet, at a depending point, to allow so much of the pus to escape as the natural elasticity of the parts will express, and then to apply a bandage of elastic webbing around the limb, or wherever it is practicable, covering the wound with a pledget of lint, but *not* introducing any between its lips. By a repetition of this operation at intervals the cavity of the abscess will gradually diminish, without overtaxing the power of the patient.

Of the use of drain-tubes I acknowledge I have but limited

experience. I was always averse from their employment, as I am satisfied they often do more mischief than good. No doubt they are valuable, indeed necessary, in some instances; but, except in dealing with long and tortuous channels, I would rather trust to nature than risk the consequences of the necessary resentment excited by the introduction of a foreign body.

Sinuses are proverbially troublesome to deal with. When running horizontally or near the surface, free incision is no doubt the most certain method of curing them, by converting the sinuous track into a simple sluggish ulcer: but such sinuses I have often cured by injection of a solution of caustic sufficiently strong to ensure plastic effusion. This should be followed by firm pressure so as to keep the walls of the sinus in contact; they will then adhere. Sometimes pressure alone will accomplish this object, for the chief obstacle to obliteration is the mechanical one of constant accumulation of discharge within the sinus, succeeded, no doubt, by the secretion of a fluid in which there is no reparative material.

Nævus.—For the destruction of a cutaneous nævus I have found the strong nitric acid the best application. This form of the disease is not always continuous in its extension; sometimes, in children, it becomes after a time self-obliterated.

I have often injected subcutaneous nævi; but there is danger in this mode of treatment, and I have for a long time discarded it in favour of another method which is equally efficacious and far more under command. It is this,—I use a broad, lance-shaped needle set in a handle, or a small tenotomy knife, with which I perforate the skin immediately external to the margin of the nævus, and cut up the diseased tissue within. Having previously prepared a probe by dipping its point in nitrate of silver melted in a watch-glass, I introduce the probe along the track made by the needle and move it freely about in the tumour until the caustic is dissolved. This plan has the further advantage of preventing bleeding by the track, and of securing an opening for discharge should suppuration ensue. A large nævus may require a repetition of the operation. I have never used galvanic or other cautery in either form of the disease. Excision is not often needed or admissible.

Small nævoid points, which are often a disfigurement to the face, are readily cured, without scar, by touching them with a point of heated metal. The proper instrument for this is a rod of steel, bent at the end and expanded into a small bulb with a point to it. This is heated in a spirit lamp, and can be accurately applied to the centre of small radiating vessels of which the disfiguring spot consists. No after-treatment is required, but the eschar should not be meddled with.

Colotomy.—I would bear my testimony to the value of this operation as a palliative in malignant obstruction of the bowel, by removing a very distressing source of suffering to the patient. I prefer an oblique to either a vertical or horizontal incision; and the exact line of the incision should be distinctly marked beforehand with an indelible fluid or pencil.

Carbuncle.—Whatever may be the pathological explanation of the origin of carbuncle, its local treatment is not influenced thereby. Premature interference with the knife is to be deprecated; it does more harm than good, and I have very little confidence in any measures which are advocated for "cutting short" the disease. It will run its course, or, if thwarted, develop itself in a neighbouring part. It is still, I believe, the common practice to incise a carbuncle freely; yet I have long since relinquished this mode of treatment with, I believe, satisfactory results. The temptation to relieve the tension of a large carbuncle is, I admit, great, and in some instances the position of the disease and the suffering of the patient may require it. But such cases are few. Early incision, I have said, is mischievous; and when the softening-down process has commenced, and pinhole openings of ulceration appear, the surgeon may help nature by passing the point of his bistoury deeply down into these apertures, so as to facilitate the escape of the softened plastic deposit and sloughs. Warmth and moisture, in the form of poultice and fomentation, should be assiduously applied, and may be rendered stimulating if desirable. A poultice of scraped carrot or of linseed-meal mixed with yeast is useful in this respect. I have found the reparative process more speedy in cases treated in this way than where the diseased mass has been freely cut across; and the destruction of skin, if not less, is of a character that admits of much speedier healing, because

no large gap is left, but every island which retains its vitality is a centre from which fresh skin is produced. Stimulants and tonics should not be indiscriminately administered in large quantities. Attention to the healthy condition of the secretions is an important part of the treatment.

Erythema.—There is much the same difference between erythema and erysipelas as between a common boil and a carbuncle; and the local treatment in each case varies accordingly. I have never found nitrate of silver of any use in erysipelas, but of much value in erythema. I think its reputation in the cure of the former disease must have arisen —in some instances at least—from the two complaints being confounded. Spreading erythema may be generally arrested by circumscribing the affected part with nitrate of silver, applied in the stick. I have several times suffered in former years, when I was teaching anatomy, from an erratic form of erythema following poisoned wounds of the hand, and have found the caustic useful on these and similar occasions. I suppose the effect produced on the cutaneous capillaries by the application renders them insusceptible of the spreading inflammatory action; the prairie fire is arrested by burning the grass in front of it.

Gouty deposit on penis.—I have seen four cases of this affection, which was, I believe, first described by Sir Prescott Hewett. One, the first, was a hospital patient, the others were private patients. One occurred in a young man of thirty, one in a man of forty or forty-five, and the other two were in elderly men. My hospital case much puzzled me, for I did not know what it was, and did not ascertain whether the patient was gouty. In the other cases the gouty diathesis was unequivocally marked. In all the deposit was chiefly on and apparently attached to the dorsal surface of the corpus cavernosum, but so far involved its texture as to give rise to the complaint that erection of the penis was accompanied by distortion. The impression conveyed to the touch was that of a large and firm scale of cartilage laid over part of the dorsal surface of the cavernous body. No pain was experienced, except when the organ was distorted. I did not watch my hospital patient long, as I could do nothing for him; but in the other cases, which I kept under observation for a lengthened period, a long time

elapsed before there was any change; ultimately, however, in two of them I had the opportunity of learning that the deposit had almost or entirely disappeared. These deposits did not seem to be affected by treatment.

Treatment of stricture.—Few subjects have attracted more attention among surgeons than the treatment of stricture; and the measures adopted for its relief or cure are many and various. Simple dilatation is the most natural and safe; and I may add that I think it the most lasting where it is successful. But it is tedious and, in some instances, inapplicable. When a more speedy method is demanded, which is the best? I prefer caustic to cutting or splitting. I am aware this practice is not held in good repute; but here I am speaking only of my own experience of its utility. It of course requires care in its employment, but in this respect it is not peculiar among remedies. I have used the potassa fusa in many cases, and have found it especially useful in firm and irritable strictures, and I cannot recall a single instance in which I have regretted the selection of this method of treatment because of any ill consequences resulting from its use. It is necessary, in the first place, to be satisfied that you can pass a good-sized sound down to the seat of stricture. The instrument I employed to apply the caustic was a sound of medium size, with about half an inch of its extremity perforated with a small aperture, and made to screw securely on to the shaft of the instrument. On the summit of the long male screw, and therefore near to the aperture, the caustic was placed in a small piece of lard. Its gradual deliquescence allowed of time to pass the instrument down to the stricture, against which it was to be firmly, but not forcibly, pressed for one or two minutes. Not infrequently the obstruction was at once overcome, and the sound was passed on into the bladder, or a second operation might be required after the lapse of two or three days, if a moderate-sized instrument could not be passed. Generally a small slough is washed out with the urine. The patient should be kept quiet on the day of operation.

It is scarcely necessary to add that an instrument of some sort should be passed afterwards from time to time; and with this precaution I do not hesitate to say that, in suitable

cases, this treatment is not only safe, but the relief is, in most instances, enduring.

Emphysema and pneumothorax.—I have seen the entire trunk, face, and a portion of the limbs distended by air extravasated into the subcutaneous areolar tissue, and I have seen one pleura distended with air, to the entire occlusion of the corresponding lung and the displacement of the heart. Yet I cannot recall an instance in which either condition with its causative injury, when uncomplicated with other mischief, has proved fatal.

It is well known that external emphysema is unimportant, except in so far as it is an indication of wounded lung. But I remember the anxiety occasioned by my earlier cases of pneumothorax as I watched the increasing dyspnœa and blueness of lip, prepared to give relief by tapping the pleura if needed. But I have never found it necessary; indeed, unless imperatively demanded, it is an ill-advised interference, inasmuch as it impedes or arrests the relief which nature is preparing.

The comparative infrequency of wounded lung in fracture of rib is evidently due to the mode in which the ribs are usually broken, *i.e.* by being over-bent by pressure on their extremities; the bone is then broken outwards, and the fractured ends do not encroach on the cavity of the chest. But when the violence is inflicted directly on the injured part the rib is driven inwards, and the lung is almost inevitably wounded. This is usually indicated by the condition I am considering; either emphysema or pneumothorax, accompanied generally by some spitting of blood sooner or later. This, together with the inflammation of the lung which follows, is usually localised; unless in specially predisposed patients, general pneumonia is a very rare sequence. If the inspired air finds a ready exit into the areolar tissue, the patient generally escapes pneumothorax, but when there is some obstacle to this extravasation, the air usually finds its way into the pleura. In some instances these conditions coexist, and if complicated by more or less pneumonia the physical diagnosis of the actual state of the lung becomes very difficult. This is owing to the way in which the lung sounds are masked, by the receding of the lung from the chest wall, and by the crackling

sound emitted by the external emphysema. In such cases we must depend very much upon the general symptoms, viz. the temperature, pulse, pain, and character of the expectoration.

But how is it that escape of air into the pleura is arrested? The fact is that this extravasation usually continues so long as air is drawn into the lung. As it recedes from the chest wall the facility for the escape of air is without interference, and the lung is never at rest. But as soon as it is emptied by compression and at rest, the healing process is commenced by the deposit of plastic material which closes the opening; and when the laceration is thus closed the lung gradually resumes its normal function. Therefore it is that interference, except imperatively demanded, is mischievous; and it is surprising how the system accommodates itself for a time to this partial privation of such an important function. It is scarcely necessary to say that the ordinary treatment of fractured rib must be delayed, or very cautiously exercised, until the lung begins again to expand.

What becomes of the extravasated air in these cases? It is said to be absorbed; but by what channels and in what condition or combination it is circulated, and ultimately appropriated or discharged, is conjectural: it is most probably by solution in the blood.

The pulse, temperature, and tongue.—The varying condition of these guides in diagnosis are scarcely less important to the surgeon than to the physician. Each may be deceptive and misleading, if trusted to alone, but this is rarely the case when they are studied conjointly. A quiet pulse is always reassuring, but a quick pulse, *per se*, need not be alarming. So many circumstances accelerate the heart's action that a hasty conclusion must not be drawn from this sign, and it is always better, for an obvious reason, to delay feeling a patient's pulse until the excitement of the doctor's visit has subsided. In young people the pulse is less reliable than in old; in children, especially, it is often very deceptive. The heart seems to respond so much more readily to any appeal in youth, however trifling. I am speaking now particularly in reference to surgical cases; but I remember Dr. Marshall Hall pointing this out to me when I was young. The strength of the pulse,

as tested by the resistance it offers to the pressure of the finger, is often more trustworthy than the frequency of its beat, though liable to misconstruction unless considered in relation to surrounding circumstances; arterial constriction or capillary obstruction are not infrequent causes of deceptive strength of pulse.

The watery pulse which is obliterated under the mere weight of the finger, and the thready pulse are generally unmistakable evidence of feeble or sinking power. Yet, it is important in all serious cases to ascertain, if possible, the normal standard and character of the pulse, and also whether there be any abnormal arrangement of the arteries at the wrist, and to feel both sides, which do not always agree. The normal numerical standard of the pulse varies very much in exceptional cases, in some instances ranging very high, in others unusually low.

As variations in *temperature* signify corresponding variations in the evolution of animal heat, the combustion must be rapid where the temperature is high; and this implies both quickened circulation and respiration. This may be localised where the area affected is limited, but when general it naturally excites uneasiness. But many instances occur in which a general rise of temperature is due to such transient cause as passing functional derangement. These temperature changes in disease are determined by the activity of the vaso-motor centres, of which the thermometer is the only satisfactory gauge; and a pronounced and continuous deviation from the normal standard is a measure of the extent to which the nervous system generally, through the cyclo-ganglionic centres, is involved. Whatever lowers the temperature acts through the medium of the vaso-motor sources of nerve-energy.

Where the heart and lungs are healthy the *respiration* keeps pace with the pulse, unless, indeed, the air-passages be obstructed by spasm or from other cause, or there be some other palpable explanation of the irregularity; I mean that a quickened pulse in disease is usually accompanied by corresponding quickening of the respiration. Yet this is not the case in health; for the respiration is more uniform than the pulse. By itself, therefore, rapid breathing does not import much, the condition of the heart and lungs with the air-

passages, as a disturbing element in the diagnosis, being excluded.

The variations in the aspect of the *tongue* are worthy of careful study. It is difficult to describe satisfactorily these varied appearances; indeed, I know of no simple source of diagnosis which requires and repays personal observation more than the tongue; the association of its appearance with corresponding conditions of internal organs can be acquired by careful observation only. Yet the natural appearance of the tongue is not uniform; I mean that in health it presents a different appearance in different individuals; though this is only exceptional it should not be lost sight of. The tongue rarely deceives those who have familiarised themselves with the interpretation of its changing surface; yet in one respect it may mislead the surgeon who is, perhaps, anxiously watching the course of a serious accident or operation. Under these circumstances, some functional derangement to which the patient has been subject, or some localised inflammatory attack, such as limited pneumonia, may be first betrayed by a furred, or glazed, or dry tongue, and excite misplaced alarm. The lesson thus taught is a simple one, but not always applied; viz. that, in the absence of a satisfactory explanation of any diagnostic sign in relation to the condition for which the patient is under treatment, the investigation should be extended in other directions likely to offer a solution of the perplexity.

We are all more or less physiognomists, but the medical practitioner ought to make the *expression* of the face in disease his special study, for it is a valuable help in diagnosis. Even the position of a patient in bed will often show whether he is suffering and where. I remember a remark that was attributed to Sir Astley Cooper, that if he found his patient lying with his hands clasped behind his head, he was satisfied there could not be much amiss with him. But the expression of the eye is much to be depended on. The languor of depression is as far removed as the gleam of excitement from the peaceful expression of ease; and these differ equally from the vacant look of inanity, or the glare of delirium which reveals the subjective influence under which the intellect is wandering. It is difficult, moreover, for the malingerer to control the expression of the eye, however he may command his mouth;

a shrewd observer would detect the attempted fraud in most instances.

A soft *skin* of normal temperature may often correct an erroneous conclusion hastily founded on a quickened circulation, though a harsh and hot-feeling skin is not necessarily indicative of any serious functional disturbance. The readiness with which perspiration is excited varies remarkably in different individuals; a circumstance which should be borne in mind in estimating the value of this sign in diagnosis. The palm of the hand is generally the first area to denote this anxiously looked-for relief. It is difficult to account for the profuse perspiration which is met with in some cases, without assuming that it is an eliminative effort, although it may be abortive. Abnormal blood-pressure or loss of balance in the circulation is often redressed by the salutary abundance of this secretion.

Fractures of the patella have received a great deal of attention; and many expedients—some very inadmissible—have been resorted to for the purpose of securing accurate or osseous union. Why is the old-fashioned treatment by position discredited? I have seen excellent limbs, as useful in every respect as before the injury, after treatment by simple extension, and a couple of pads or straps to help to keep the fragments in position. But I have also seen very unsatisfactory results, yet not without explanation; and that explanation is usually, impatience on the part of the patient, and weakness of the medical attendant in yielding to the prayer for too early liberty. The mischief is not done during the ligamentous union, but in permitting it to be stretched and elongated by too early flexion of the limb. When there is fair ligamentous union, by all means let the patient get about; but the knee must not be flexed in walking until the union is sufficiently firm to resist the tendency to stretch, which is rarely under three or four months.

Is osseous union a desideratum? In other words can we secure, in such union, that perfect equality of articular surface at the line of fracture which is essential for free movement? My own experience does not enable me to answer this question; but it is worthy of consideration.

Hæmorrhoids, &c.—The most common cause of the varicosity

known as hæmorrhoids is venous obstruction from constipation. Pregnancy acts in the same way. I suppose the association between functional derangement of the liver and piles is due to portal congestion, and also to confined bowels consequent on deficiency of bile. That which is popularly known as an "attack of piles," and which consists in strangulation of a varicose mass by the sphincter, is best dealt with by puncture with a lancet, and subsequent application of ice or iced-water. I suppose no one would be inclined to select this crisis as suitable for a radical cure. I have tried all methods for the removal of hæmorrhoids, cutting, crushing, burning, and ligature, and am disposed to give a preference, in most cases, to the last-mentioned. If properly performed, I think it is the safest operation, and as little painful as any. The bowels having been freely relieved, the mass to be removed should be firmly held and drawn down with a suitable pair of forceps; the skin around the base of the swelling should then be divided by a circular incision, and the ligature firmly applied, so as to exclude the integument. If a double ligature be required, a needle may be used to carry it through the tumour, and it can then be tied on either side. In some instances small polypoid excrescences are met with in the interior of the rectum; these, if within reach, may be detached with the finger-nail; they are a source of considerable irritation and tenesmus.

Prolapse of the rectum is a very troublesome affection; in some cases occurring at every evacuation of the bowels to a limited extent. I have very little faith in any local applications for the relief of this condition, but the comfort of the sufferer will be consulted by recommending him to habituate the bowels to act in the evening, just before retiring to bed. This habit may be soon acquired; and rest in the recumbent posture afterwards for a lengthened period will assist materially in restoring a healthy tone to the bowel. Aloetic medicines are generally prohibited in these and similar affections; but I have found them valuable, for the simple reason that this drug relieves the rectum, and thus removes a common cause of the trouble. This remark applies especially to cases in which the sluggishness of the rectum is the cause of violent efforts to evacuate its contents. A pill, containing aloes (the watery

extract), with rhubarb and nux vomica, forms a good laxative taken at meal-time. The constant use of warm injections is, in my experience, prejudicial; their occasional use is serviceable.

Stricture of the rectum is not a common complaint, though often supposed to exist; and a vast deal of mischief is done by the heedless, sometimes unscrupulous use of bougies. Annular stricture of the bowel may be relieved, when within reach, by incision in three or four places, with a narrow and flat button-pointed bistoury; but in such cases the subsequent use of the bougie is essential.

Contraction of the skin and fasciæ.—There are few operations which are more disappointing to the young surgeon than those which he undertakes for the relief of contracted skin or fasciæ; at least such was my own early experience, and I have witnessed similar disappointment in the hands of others.

As regards the skin, it is almost as difficult to prevent contraction in the healing of a burn or breach of surface from any cause, as to cure it when it has occurred. All that can be done is to keep the injured parts on the stretch and to employ the modern method of skin grafting. Yet, with silent and steady step the contraction goes on, almost unimpeded by any mechanical obstacle. Moreover, it stops not when the breach is closed, but increases as the cicatrix thickens and becomes indurated. The power of this stealthy agency was well illustrated in a hospital case I had many years ago. I was very anxious to preserve freedom of movement in the arm of a boy who had been badly burnt about the axilla, and I contrived a piece of mechanism which rested, by a broad plate, on the ribs, and supported the arm in a narrow dish, the two being connected by an elongating screw arrangement. I had power enough here without, as I supposed, risking any mischievous consequences; but I was mistaken. Of the efficiency of the mechanism there was no doubt, but mischief resulted in a direction I had not anticipated, and was discovered not at all too soon. The boy's spine was yielding by lateral curvature, and I was compelled to relinquish my machinery. Simple division of these contracted scars is useless, and the insertion of transplanted skin as fruitless, unless the pseudo-skin be dissected out before inserting the new texture to take its

place. These were terrible operations, from their painful and protracted nature, before the boon of chloroform was introduced.

Very nearly the same remarks are applicable to contracted fasciæ. This condition is almost always the consequence of chronic inflammation, usually but not necessarily caused by mechanical irritation. These cases, which specially include contractions of the fingers and toes, are not difficult of diagnosis, and readily distinguishable from the much rarer form of contraction dependent on the tendons. Subcutaneous section of these contracted bands is easy, but the straightening of the finger or toe is not always the immediate result of the operation. Here the same difficulty presents itself as in the case of the skin. The fingers may be extended by various mechanical contrivances, though caution must be exercised lest pressure on the ungual phalanges produce mischief; I have seen impending loss of vitality from the incautious use of continuous extension in one of these cases. The most certain cure is excision of the contracted tissue where practicable; if left, sooner or later contraction will again ensue. I think contracted fingers were more common formerly than now; they occurred often in stage-coach drivers, and this race is now nearly extinct. In contraction of the toes I have found it sometimes the easiest and most efficient method of affording relief to remove part of the offending member. The suffering occasioned by the abnormal position of a toe thus affected renders the patient a willing party to the operation. I have never known the great toe to be thus contracted; the inner division of the plantar fascia is thin and feeble, and mechanically the position and free movements of this toe render it less liable to be so affected.

The influence of food and drink on health and longevity.—This is a well-worn subject; much has been written on it, and many are the experiments which have been undertaken to throw light upon it, yet it is a subject on which it is very difficult to generalise with practical advantage, except in educing from observation and experience some broad principles, which few would gainsay, and perhaps as few systematically adopt. With the lower animals the selection of food is limited by instinct and habit, and no doubt also by

the restricted sphere of the senses of taste and smell. But with man the case is different, the attributes of these senses, though less acute, are more expanded from inheritance and education, and the luxurious habits of civilisation supply plentiful opportunities of gratifying a natural taste for variety of food, which has been enhanced by cultivation. But it is this variety in the tastes and habits of individuals, combined with constitutional peculiarities, inherited tendencies, and special surroundings, which constitute the difficulty in attempting to impose an uniform standard upon all. Some of these peculiarities are very inexplicable, seeming almost capricious, whilst others admit of explanation. It is, for instance, intelligible why fresh rhubarb or tomatoes should disagree with a person prone to lithiasis; but it is not so apparent why the smallest quantity of honey or two or three damsons should produce distressing gastralgia, or hare cooked in any form should cause similar pain and sickness; yet I know instances in which these effects are invariably produced.

Milk is by no means universally acceptable to the adult stomach; indeed, I think it is exceptionally so if taken in any quantity; but, like other animal food, I have found it more digestible when cooked, or with the addition of a little lime-water. Much may be done by training the stomach to certain articles of food, and so valuable an article of diet as milk should not be thrown aside without this attempt. A frequent error is to make the trial with a large draught, and to condemn it if the stomach resent the liberty, whereas a gradually increased quantity may be taken with impunity and advantage.

Fish agrees with most people, but I have known some few instances where this is not the case. I believe the cooking of fish or the sauces with which it is eaten, are often unwholesome; plain boiling is the most wholesome form of cooking almost all fish. I have never heard a satisfactory explanation of the well-known fact that shellfish frequently produce sickness and nettle-rash.

I am disposed to regard roast or broiled meat more wholesome than boiled, as well as more nutritious. Young meat, I feel sure, is not so digestible as adult meat. Some persons can eat fat freely, others cannot digest it. As regards vegetables, I believe there is much truth in a remark of a former

physician of our hospital, that a variety in small quantity better suits the chemistry of digestion than all of one sort. I am not disposed to accord to the potato universal acceptance; I think there are some stomachs with which it essentially disagrees.

But these facts are familiar, and the lesson they teach is that no hard and fast rule can be adopted in diet; each individual ought to possess sense enough to discover what does not suit him, and self-denial enough to act accordingly; but the pleasanter and more general theory is that what is agreeable is wholesome. Certainly it is the doctor's business to study the peculiarities of each patient, whilst he lays down some general rules as to diet and abstinence.

One broad fact which my hospital experience has taught me is this: that a large proportion of the ailments of patients in the medical wards is due to their over-stimulation and malnutrition; and that the ill success of many of our operations and accidents in the surgical wards is attributable to the same cause. No doubt more mischief accrues from excess in drinking than from defective nutriment, but they often go hand in hand, and as cause and effect. Why should this heart give way before its time? Why that hard-worked kidney strike work at last? Why that liver lose its primitive structure and become useless? Each has done its own work and loyally helped the other, till the strain could be borne no longer. Alcohol must answer the inquiry. Why, again, does this simple wound entail phlegmonous inflammation of the whole limb? Or that operation fail from lack of rallying power in the patient? The same reply must be given. But it is not in hospital practice alone that we witness these things; more often, however, it is indulgence in food that is responsible for sickness and premature decay amongst those in easy circumstances. Indeed, it is my conviction that a large proportion of those who have the means indulge the appetite for solid food beyond the requirements of health. It is not variety that does the mischief, but quantity, the excess being stimulated by the variety.

I would here remark upon a fallacy which is so common among the young and robust when expostulated with on account of excess. They reply that it does them no harm,

they feel none the worse for it. Let them remember that nature, though kind to the reasonable, is an exacting creditor to those who betray her confidence and take advantage of her goodness; as years advance the penalty will be claimed, and probably with usury.

Is total abstinence from all alcoholic drink essential to meet these grave consequences? Surely it is to be preferred to any excess, but, except as an example to others, it is not needed; nor is it desirable for all. The simple lesson which a life of observation teaches is, moderation in all things and abstinence from that which is known by individual experience to be prejudicial; and this, apart from inherited tendencies and the accidents which necessarily beset us in our journey, is the patent secret of the healthy mind in the healthy body, and of the attainment of the allotted age of man on earth.

One word respecting the almost universal habit of smoking. The strong prejudice entertained by some people against this use of tobacco is not supported by facts impartially collected. There are two sources of fallacy in dealing with this subject; selected cases of excess are quoted, and cases in which, even in great moderation, smoking is injurious. I have no doubt that in some individuals this habit, if persevered in, would destroy health and curtail life; whereas in others it is not only an allowable indulgence, but is positively beneficial, by its anodyne influence on an excitable nervous temperament. In the aggregate, I believe, very little mischief is done by moderate smoking, and that it is injurious only to those who adopt it as a fashion, and pursue it notwithstanding unequivocal evidence of its disagreeing with them: but excess is in all cases to be condemned as injurious to health and also to intellectual activity. The noxious habit of inhaling tobacco smoke is to be unconditionally condemned.

Fractures near or into joints are often obscure and difficult to manage, and I know of no general rule by which the diagnosis between these injuries and dislocations may be determined with certainty. To the practised eye and hand the characteristic deformity is the best guide; the presence or absence of crepitus is often misleading. In short, each case requires to be judged of very much on its own merits.

In special cases there are special diagnostic signs, which are

described in surgical treatises, such as eversion, shortening, and mobility in fracture of the neck of the thigh-bone; but impaction or muscular rigidity may mask these signs. The mode in which an injury is produced, if accurately ascertained, rarely fails to indicate the probable nature of the resulting mischief, though I am far from saying that reliance is to be placed on this alone. In fact it is often impossible to learn with certainty how an accident happens; sometimes the soiling of some part of the dress will indicate where the blow was received; but the account of the patient must be accepted with caution. Fractures near to joints from indirect violence are, I believe, rare; whereas dislocations almost always are caused in this way. Thus, if you obtain unquestionable evidence of a patient having fallen with his arm extended, so as to receive the first impact of the violence on the elbow or palm of the hand, you may assume, almost certainly, that the loss of rotundity of the shoulder is due to the head of the humerus having been dragged out of its socket by the action of the latissimus dorsi and pectoralis muscles. If, again, you ascertain that a patient has fallen heavily on the trochanter major, you may infer that the deformity of the joint is due to fracture of the neck of the femur. I may remark, by the way, respecting the often-asserted fracture of this part of the bone as the consequence of a trip or false step, and, therefore, of indirect violence, that I believe this is almost invariably a fallacy, resting on the testimony of the patient only. The trip was probably caused by feebleness, but the fracture was produced by direct violence to the trochanter, in the fall.

Fractures near the knee and ankle are generally more readily diagnosed than those in close proximity to the elbow and wrist. But here again the nature of the causative violence is almost uniform as regards the elbow; fracture resulting from direct force, combined (in the prominences of the ulna) with muscular action, whilst dislocation is caused indirectly. At the wrist the diagnosis is simplified, *quoad* dislocation or fracture; for, though I am not prepared to deny the possibility of the radius being dislocated from the carpus, I have never seen nor met with a well-authenticated case. I apprehend that the insuperable resistance of the flexor tendons must explain the extreme rarity of this accident; whereas fracture of

the radius near to the carpus, as is well known, is a very common consequence of falling on the palm. I have seen a few curious instances of dislocation of a carpal bone, analogous to similar displacements in the foot. I have also seen dislocations of the tarsal end of the metatarsus; but I cannot recall an instance of simple dislocation of a metacarpal bone from the carpus.

The part which muscular action plays in the production of dislocation and fracture is a subject of interesting speculation and of some practical importance. I believe the muscles have very limited influence in the breaking of bones, except in the well-known instances of the olecranon and patella. A humerus must be very fragile to be broken by the act of throwing, and even this would be only indirectly through the agency of the muscles. In dislocation, on the contrary, muscular action is all-important. A favorable condition, as regards position of the joint and the exercise of powerful muscles in the right direction, is all that is required to ensure displacement. Thus, the elevation of the arm throws much of the head of the humerus out of its shallow cavity, and the necessary consequence of the concurrent action of the latissimus dorsi and great pectoral muscles is to dislocate it downwards into the axilla. When the legs are widely separated, it is the glutei chiefly which throw the head of the femur into the foramen ovale. In like manner we may trace the way in which almost all dislocations are produced; and the practical lesson this knowledge teaches is, to direct our steps in accomplishing reduction. We may assume the following axioms respecting muscles in their relation to joints: 1. That they are important agents in preserving their integrity. 2. That under favouring circumstances, they are the chief instruments in producing dislocation. 3. That they resist reduction; and 4. That they contribute to effect replacement of the bone, if the surgeon favours this help by the relation in which he places the head of the bone and the cavity from which it has been displaced.

In examining injuries either with eye or hand, the greatest assistance is obtained by a careful, and if possible *simultaneous* comparison of the healthy with the injured side. Any deviation from symmetry is thus most readily detected. For instance, in suspected injury to the shoulder-joint, by standing

behind a patient and carrying both hands simultaneously over the outline of each clavicle, acromion and spine of the scapula, the attention would be immediately arrested by any difference between the two sides.

On Railway Accidents.—With the manifest advantages which our railways confer they are responsible for a certain amount of physical injury to their passengers, and also for much demoralisation, of which they are at once the unwilling cause and victims. Railway injuries may be classified under the two heads of those which are genuine and those which are either assumed or grossly exaggerated; and if from the former we deduct those cases which have no peculiarity as associated with railways, the residue is extremely small in which specific railway concussion occurs. To be in a railway collision is esteemed a great boon by many; for every facility is afforded to the unscrupulous claimant to obtain large compensation for asserted injury, supported only by subjective symptoms, which the medical adviser of the Company is invited, either politely or with effrontery as the case may be, to explain or refute; and a suggestion that the symptoms are assumed or even exaggerated excites sympathy rather than credence. It is truly humiliating to witness such scenes, which are so constantly brought under the notice of consulting surgeons to railway companies; and there seems to be no remedy for this state of things but that which I have elsewhere suggested, that every litigated case should go before a tribunal of qualified medical men, who should hear and decide on the medical evidence which shall be placed before the judge and jury. However, I wish only to speak of the observed effects of genuine railway concussion, as they have come under my observation in several years of opportunity that have been furnished to me by one of these special appointments.

In many, perhaps in most, instances the physical shock is exaggerated and complicated by its moral effects. The alarm, the consciousness of severe injury escaped, and the dread of future risk weigh heavily on the patient, and lend an importance to local suffering of which these symptoms are assumed to measure the gravity. It is not to be denied that this induced state of feeling is a real element in the suffering entailed; but this "nervousness," as a natural consequence of

an accident, should be regarded separately and not as symptomatic of the physical injury; yet, before a legal tribunal, it is next to impossible to enforce this distinction, and with the patient it is not to be expected.

Formerly all the general consequences of a railway accident were attributed to concussion of the spine; but, as I presume this is found to be untenable, the explanation now put forward is usually of a different nature.

I have no doubt that in some instances—though I believe they are comparatively rare—there is genuine concussion of the spinal cord; but their formerly assumed frequency was due to the common symptom of localised, or even general, tenderness and pain in the spinal column. I am satisfied that this is often caused by a twist or strain of the column, and in no way associated with any injury to the cord. Concussion of the cord is the consequence of a shock to the whole back, such as occurs when a passenger is thrown with violence against the back of the carriage; and in these cases not infrequently the more serious symptoms develop themselves at a later period, affecting especially but not exlusively the lower extremities. This condition is certainly the most serious and may entail lasting consequences, branching out in various directions by secondary implications. But observation has taught me not to attach much importance to spinal tenderness, whether local or general, if unattended by recognisable symptoms of nervous injury.

By far the most common form of real injury I have met with is what is termed "general nervous shock;" and this is usually—I may say always—so much associated with mental disturbance, that it is difficult to distinguish between the actual and the exaggerated, the real and the imaginary. Whether or not the cerebro-spinal system be primarily or chiefly involved in this shock, the symptoms usually indicate the cyclo-ganglionic system as that which is afterwards chiefly affected. All the organic functions are more or less disordered; the machinery is thrown out of gear, and one organ sympathises with another, and the patient is consequently more or less miserable. The heart's action is generally feeble, quick, and irritable; the stomach sometimes disposed to reject its contents, and the digestive power weak; the bowels generally

inert; the liver inactive; the urine sometimes abundant and pale, at other times loaded with lithates. All sorts of anomalous sensations, sometimes pains, are complained of; there is an indisposition to move about or to occupy the mind, which symptoms are soon exaggerated, by indulgence, into muscular disability and mental failure. Disturbed rest, distressing dreams, failing eyesight or hearing, strange sights and sounds, offensive tastes and odours, loss of memory, giddiness, coldness of the extremities, depression of spirits, and many other symptoms of the same class supervene, for which the organic, including the vaso-motor nerves, are responsible, either primarily or exclusively. It is worthy of remark that the majority of these cases are treated by tonics, a generous diet, and stimulants in some form; moreover, strict rest of body and abstinence from all mental exercise are enjoined. Yet it seems to me that such management is at variance with reason as well as sound medical practice; indeed, it would be difficult to devise any plan of treatment better calculated to aggravate the symptoms; especially as the patient has a strong motive for nursing them, in the prospect of a liberal compensation for his injuries. Believing as I do, that the ganglionic system is the seat of this disturbance, and that a morbid state of mind serves to enhance the suffering of the patient, I am satisfied the proper treatment is almost purely hygienic for the body and cheerful encouragement for the mind. It is singular, in this *enlightened* age, how much the prejudice in favour of high living and tonics for "weakness" still prevails. Yet, what can be more hurtful than to stimulate an irritable heart, or mischievous than to load a stomach with food it cannot digest? Not less injurious is it to nurse the moping melancholy of the patient by bidding him to be idle, bodily and mentally, and thus leaving him a prey to his morbid feelings and fancies. If these injuries were self-inflicted, and there was no prospect of gain from them, their results would be very different, as I have occasionally noticed in those honorable exceptions where no compensation, or only a fair equivalent for the injury sustained, has been sought. In some more persistent and serious cases, the cerebro-spinal centre becomes more evidently involved, as exemplified in local or general hyperæsthesia, numbness and formication, cramp and imperfect

co-ordinating power in walking. In several instances I have been informed that there was sexual incapacity, with absence of sexual desire. Difficulty in micturition is rare. Many of these symptoms are more or less suggestive of that neuro-cachectic condition which, for lack of a more comprehensive name, we denominate "hysteria." Every circumstance, in short, whether external to the patient or in his own condition, conspires to exaggerate the really existing trouble; and it need scarcely excite surprise that, in a neurotic subject, the indulgence and cultivation of morbid feelings and fancies should culminate in a chronic state of depressed vitality, both bodily and mental, which an effort at an early period would have sufficed to mitigate if not to neutralise. Besides hygienic treatment, including plenty of fresh air and cheerful, encouraging surroundings, I am not aware that medicine is of much value in these cases. Nerve-tonics are helpful; but nothing, in my experience, hastens the cure so much as the removal of suspense by a settlement of the claim for compensation.

One word respecting habitual railway travelling. We are often asked whether it is injurious. Now, there are many inquiries to be made before this question can be answered satisfactorily. Health, temperament, occupation, distance, and frequency of trains are some of the more important elements for consideration. Persons in feeble health and of nervous temperament would do well to avoid a daily journey by railway. I am persuaded that, in such circumstances, serious mischief is often the result of hurrying to be in time for a train, especially when necessary business has to be compressed into a given period to accomplish the desired journey. Work is done under pressure and a constantly present sense of anxiety as the hours pass by; and this harassing care is enhanced if the distance be great and the trains few and far between. The heart becomes irritable, and a hurried walk or run to "catch the train" produces excitement and exhaustion which the journey does not serve to mitigate. If the heart be feeble—not to say organically diseased—the consequences may be and have been even fatal.

The motion of railway travelling, though apparently easy, is often prejudicial. It is not the rough, unequal jolting of the road, but a constant vibration which especially affects

some people. I remember a friend of mine, whose special experience enabled him to express the opinion, told me that this jarring of the frame was more likely to produce miscarriage than road travelling. I believe that eggs sent by train, if not properly protected, fail to produce chickens. The use of an air or water cushion obviates much of this objectionable vibration, especially if the support extend also behind the back.

A fall on the platform, in descending from a carriage, is not infrequent. May not this arise, in some instances, from the habit of sitting cross-legged, whereby the upper limb becomes temporarily disabled from pressure on the popliteal nerves? The leg "goes to sleep," and in the hurry of getting out, this is not perceived until the loss of power is proved by the impotence of the limb to support the weight. I have experienced this contingency, and it is well to be aware of it. This form of accident has, not improbably, figured amongst others, with no better justification, as a claim for compensation against a railway company.

Ought travellers to read in a train? Some say they cannot. I think it is preferable to employ the eyes thus than in looking out on the passing scene continually; the parallactic motion of objects is very perplexing at times, and may produce giddiness and sickness. To the young and robust these remarks may appear trivial, perhaps ridiculous, but they are not addressed to such. The feeble or neurotic, and those whose mechanical elasticity is deteriorated by age, may be sensible, by personal experience, that a daily repetition of these small evils is not without a baneful influence on a rigid physical frame and a susceptible nervous system.

(*To be continued.*)

NOTES

FROM THE

LABORATORY OF ST. THOMAS'S HOSPITAL.

By ALBERT J. BERNAYS.

On Milk, Stale and Fresh.

In our 'St. Thomas's Hospital Reports' of 1878, I made the following statement:—"The effects of keeping milk have been several times illustrated in a most interesting manner. In the case of one sample I found 8·94 per cent. of solids; on repeating the analysis the second day the total solids had diminished to 8·47. The same milk, twenty-five days later, contained only 7·84 per cent. of total solids. The better the milk the longer it will keep. In other respects, much depends upon the time the milk is kept, the temperature, and the amount of air in the bottle."

Having had very considerable experience of milks, I wish to establish the thesis that it is impossible on the results of an analysis of sour milk to establish the nature of a milk when fresh.

It is a well-known fact that on standing milk absorbs oxygen from the air and gives off carbonic acid, owing to the decomposition of the casein. The fat increases in quantity.

When milk has been skimmed to a certain extent, and water added in quantity sufficient to supply the bulk of the cream thus removed, it has a tendency to decompose more

rapidly if any quantity of air overlies the milk. Such milk may still retain as much fat as public analysts allow in their standard; but, whether from germs, or from the removal of the protective fat, or from both causes, the changes in such a milk are far more rapid, but subject to no rule as to deterioration.

Here is one illustration:

	Percentage of total solids.		
	No. I.	No. II.	No. III.
April 28th . .	9·97	10·42	11·56
May 1st . . .	9·55	9·75	10·83
Total loss . .	0·42	0·67	0·73
Daily loss . .	0·14	0·22	0·24

Here we have an apparent addition of water in three days of 4 per cent. in No. 1, and of 6 per cent. in Nos. 2 and 3. These milks are of the same day's collection.

Now for another illustration:

	Percentage of total solids.
November 13th, 1873	12·05
„ 17th, 1873	11·22
Total loss	0·83
Assumed daily loss . . .	0·21

So then, in this case, the apparent addition of water in four days amounts to 8·5 per cent. But it would be a great mistake to assume an equal loss for each day, as also to take it for granted that the loss is calculable when spread over a given time. This will be well understood by the following facts:

	Percentage of total solids.	
December 16th, 1878 .	10·92	
„ 23rd, 1878 .	10·40	
„ 30th, 1878 .	10·08	
January 13th, 1879 .	9·90	
„ 20th, 1879 .	9·42	
Here we have a loss of		0·52 in first week, and of 0·32 in second week
Total loss . .	0·84	

If we take the four periods here mentioned, we have an average loss per day:

In the first period	0·074
„ second „	0·046
„ third „	0·026
„ fourth „	0·070
„ whole time	0·060

And now for another case in point. I had a milk in March, 1874, of the following composition :

Sp. gr., 1·027. Cream, 8 per cent.

Total solids	10·19
Water	89·81
Fat	3·33
Solids not fat	6·86
	100·00

This milk had been watered to the extent of 25 per cent. The bottle was at first two thirds full, kept well corked, and the amounts of total solids were determined at intervals of a few days :

	Percentage of total solids.
March 3rd	10·19
„ 5th	9·69
„ 7th	9·58
„ 9th	9·43
„ 13th	9·04
„ 16th	8·80

Here we have a total loss in thirteen days of 1·39 parts out of 10·19. The average loss per day is 0·107 per cent., but how unequally distributed ! The progressive loss every two days is as follows :

1	2	3	4	5	6
0·50	0·11	0·15	0·19	0·19	0·16

The effect of the two days' standing is the same as if 5 per cent. of water had been added. Thirteen days' standing produced an apparent addition of 14 per cent.

The greatest alteration seems to take place very soon after the souring of the milk. A few illustrations will suffice in proof of the statement :

No. 96.—September 4th, 1874	11·20 per cent. of total solids.
„ 5th	10·64 „ „
Total loss	0·56 per cent. within 24 hours.

In another case the loss is almost identical :

No. 132.—November 19th, 1878	.	12·12 per cent. of total solids.
„ 20th „	.	11·61 „ „
Total loss	. .	0·51 per cent. within 24 hours.

Here is the same milk, the total solids in which have been estimated twice within thirty-six hours :

Total solids	12·12 per cent.
After 36 hours	11·51 „
Total loss	0·61 „

In an excellent sample of milk, No. 15, 1878 :

Total solids	13·64 per cent.
After 24 hours	13·31 „
Total loss	0·33 in 24 hours.

A skimmed milk in 1879 gave the following result :

Total solids	10·74 per cent.
After 24 hours	10·33 „
Total loss	0·41 in 24 hours.

A watered milk, No. 111, anno 1877, was also examined after twenty-four hours; it was in October :

Total solids	9·65 per cent.
After 24 hours	9·51 „
Total loss	0·14 in 24 hours.

As if to mock the conclusion that any regularity of degradation exists, I give milk No. 147, anno 1877. It was reanalysed after an interval of forty-eight hours :

December 12th, total solids . .	9·75 per cent.
„ 14th „ . .	9·63 „
Total loss	0·12 in 48 hours.

And again, as it were to encourage the delusion that this regularity follows some law, No. 135 of the same year, but somewhat earlier, affords singular corroboration :

November 29th, total solids . .	11·58 per cent.
December 3rd „ . .	11·29 „
Total loss	0·29 in 4 days.

It will at once strike an intelligent observer that the opening of a bottle of milk at different times must be productive of entirely altered conditions of degradation. Quite recently in a case of adulteration (No. 185. Feb. 22nd in the present year) the following results were obtained:

February 22nd, total solids . .	10·09 per cent.
March 7th „ . .	9·38 „
Total loss	0·71 in 14 days.

It is no exaggeration to state that I could multiply the evidence here given a hundredfold. At the same time I consider that I have sufficiently proved my proposition. When a public analyst gives his certificate, he is obliged to state that no change has taken place in the constitution of the article that could interfere with the analysis. It is therefore obvious that it is not possible to make allowance for the natural loss arising from the decomposition of the milk through keeping, except by guess, and this method can scarcely be called scientific.

Connected with the subject of milk, I may state that there are some who still cavil at the standard of the Society of Public Analysts. And yet, as far as an individual may judge, I may say that the advantage of the standard is quite on the side of the farmer, and errs only in leniency. The acceptance of 9 per cent. of solids not fat, as the standard, in relation to the question of adulteration by water, is just, and for this additional reason gives the balance in favour of the vendor that no public analyst has ever given a certificate of prosecution for any amount above 8·7 per cent., and when the amount sinks below that, it is only in accordance with experience to attribute the difference to added water. The condition of a single animal might be such as to affect the character of the milk, but a diseased state cannot be accepted as a standard. It would be justifiable to prevent the sale of such milk.

Some time since we had a milk which yielded, on duplicate analysis, the following results:

Sp. gr. 1·025. Cream, 7 per cent.

Total solids	9·75	9·87
Water	90·25	90·13
Fat	2·50	2·65
Solids not fat	7·25	7·22
	100·00	100·00
Ash	0·61	
Chloride of sodium	0·08	

There was no difficulty in stating that this milk had 18 per cent. of added water. On the next morning the farmer brought me a specimen of the mixed milk from a large herd, which ought to have been of the same kind if the former milk had not been tampered with. It was thus composed:

Sp. gr. 1·033. Cream, 11 per cent.

Total solids	12·23
Water	87·77
Fat	3·23
Solids not fat	9·00
	100·00
Ash	0·81
Chloride of sodium	0·14

In this case the farmer had no difficulty in admitting that the milk had been tampered with; the solids not fat amount exactly to 9 per cent.

I now subjoin the analysis of two milks from a herd of 19 cows. They were all fed alike, and turned out to grass in October. The principal food was grass, assisted by a little hay and locust beans:

	Mornings.	Afternoons.
Sp. gr.	1·032	1·035
Cream	10 per cent.	7·8 per cent.
Total solids	12·86	12·64
Water	87·14	87·36
Fat	3·11	3·00
Solids not fat	9·75	9·64
	100·00	100·00
Ash	0·77	0.77
Chlorine as chloride of sodium	0·12	0·13

As illustrating a milk question in an interesting manner, I subjoin analysis of morning milk from two stale cows of Alderney breed; both are grass-fed.

	No. 1. Four months' gone in calf.	No. 2. Two months' gone in calf.
Sp. gr.	1037	1036
Cream	6 per cent.	6 per cent.
Total solids	12·54	13·00
Water	87·46	87·00
Fat	2·33	2·58
Solids, not fat	10·21	10·42
	100·00	100·00
Ash	0·78	0·80

Some time after calving, these cows gave a milk of the following composition. I cannot, however, say for certain which is No. 1.

Sp. gr.	1036	1035
Cream	22 per cent.	15 per cent.
Total solids	17·76	14·97
Water	82·24	85·03
Fat	7·99	5·63
Solids, not fat	9·77	9.34
	100·00	100·00
Ash	0·84	0·74

I may say, in conclusion, that these samples were taken with great care, and by an experienced hand, with the intention of proving that the solids not fat were under 9.

The duplicate analyses are those of Messrs. Stewart and Clayton, and more recently of Messrs. Brisley and Hoskins.

March, 1883.

P.S.—By an oversight this paper was sent in, but not published. Since that time much further light has been thrown upon the question. A case of mine was referred to the Somerset House chemists in October, 1883. The milk, when fresh, had the following composition:

Sp. gr. 1027. Cream, 8 per cent.

Total solids . . .	11·39	11·19
Water	88·61	88·81
Fat	3·26	3·13
Solids, not fat . . .	8·13	8·06
	100·00	100·00
Ash . . .	0·70	
Salt . . .	0·10	

Rigidly interpreted, according to the standard of public analysts, this milk has 9 per cent. of added water. I had given it as containing 6 per cent.

The milk, which had been sampled on the 18th of September, was referred to Somerset House on the 31st October, a period of six weeks having elapsed. The result was as follows:

Total solids . .	9·87
Water . . .	90·13
Fat	3·17
Solids, not fat . .	6·70
	100·00

And the conclusion is, "from a consideration of these results, and after making the addition for natural loss arising from the decomposition of the milk through keeping, we are of opinion that the milk contains not less than 14 per cent. of added water."

Now this milk, according to the Somerset House standard, contained 5 per cent. of added water, and affords further confirmation of what I have several times insisted upon in my reports, that it is almost guess-work to state by how much, *exactly*, a milk has deteriorated in keeping.

Another case may be recorded. On the 30th November, 1883, I had made an analysis of a milk, and on account of the unsatisfactory nature of the total solids, had the analysis repeated. I reported it as follows:

		Dec. 1st.
Total solids . . .	10·78	10·64
Water	89·22	89·36
Fat	2·79	2·77
Solids, not fat . . .	7·99	7·87
	100·00	100·00

Ash	0·66
Chloride of sodium .	0·13

This milk has 8 per cent. of added water. The case was referred to Somerset House, and the reply was as follows:

Received on 22nd ultimo. Marked No. 181.

"We hereby certify we have analysed the milk, and declare the results of our analysis to be as follows:

Non-fatty solids . . .	7·83
Fat	2·65
Water	89·52
	100·00

"From a consideration of these results, and after making the addition for material loss arising from the decomposition of the milk through keeping, we are of opinion that the milk contains not less than 4 per cent. of added water.

"Jan. 9th, 1884."

I was allowed by the magistrate to offer an explanation of the discrepancy. I pointed out that this milk, on the 1st December, contained 7·87 per cent. of solids not fat, and after keeping till nearly the end of January was only degraded by 0·04 per cent. From a great many experiments made in the laboratory, I had found that there was no regularity in the loss arising from decomposition, and that it could not be depended upon. If milk were quite fresh and only mixed with pure water, it underwent but little change in a cool place; but if mixed with stale milk and impure water, the degradation was very rapid. Dr. Voelcker had lately said (and he quoted him as an independent authority, without siding with much that he had written upon milk) that no analyst was entitled to come to any definite conclusion as to the original composition of sour milk. This milk, strictly interpreted, contained 11 per cent. of added water. No milkman was summoned by the Camberwell Vestry, in whose milk the solids not fat were not below 8·4, so that a considerable margin was left. I did not take this as a standard, but that of the Public Analysts, with an allowance according to circumstances. I had allowed 3 per cent., and had given the milk as having 8 per cent. of added water.

After this explanation, his Worship expressed his satisfaction and agreement with my statement.

N.B.—The milk re-analysed (from the inspector's unopened sample) on the 19th January, 1884, gave the following results:

Solids, not fat	7·66	7·71
Fat	2·68	2·68
Total solids	10·34	10·39

Again, on the 13th December, 1883, a milk was brought by a Camberwell inspector, and was at once set on for analysis in duplicate on account of its specific gravity and appearance. I gave the following certificate:

Sp. gr. 1028. Cream, 5 per cent.

Total solids	11·34	11·40
Water	88·66	88·60
Fat	3·16	3·21
Solids, not fat	8·18	8·19
	100·00	100·00
Ash		0·65
Chlorides		0·15

This milk has 6 per cent. of added water.

The report on this milk from the referees was as follows:

"The sample of milk referred to in the annexed letter, and marked 198, was received here on the 1st instant.

"Non-fatty solids	7·21
Fat	3·15
Water	89·64
	100·00

"From a consideration of these results, and after making addition for the natural loss arising from the decomposition of the milk through keeping, we are of opinion that the milk contains not less than 10 per cent. of added water. As witness our hands this 9th day of January."

Yet once more I report a case which was heard on the 23rd January of the present year.

The analysis, in duplicate, was made on the 30th November, 1883.

Sp. gr. 1025. Cream, 5 per cent.		
Total solids . . .	9·97	10·03
Water	90·03	89·97
Fat	2·65	2·72
Solids, not fat . . .	7·32	7·31
	100·00	100·00
Ash . . .	0·58	
Chlorides . .	0·10	

This milk has 18 per cent. of added water.

The referees from Somerset House reported:

"Water	91·00
Fat	2·63
Solids, not fat	6·37
	100·00

"From a consideration of these results, and after making the addition for natural loss arising from the decomposition of the milk through keeping, we are of opinion that the milk contains not less than 15 per cent. of added water."

I think these cases speak for themselves, and completely confirm my contention, of at least twenty years' standing, that no correct conclusion can be obtained from stale milk as to its original composition.

VEGETABLE GROWTHS AS PURIFIERS OF SEWAGE.

By ALFRED W. BENNETT, M.A., B.Sc., F.L.S.,
LECTURER ON BOTANY AT ST. THOMAS'S HOSPITAL.

Early in the present year I was requested by the engineer to the Rivers Purification Association to examine and report upon vegetable growths in the effluents from one of their works for the purification of sewage, with a view of determining whether they gave evidence of the purification having been inefficiently accomplished. The works in question are the Hertford Sewage Works. The sewage of the town of Hertford (population about 7000) is carried into four large tanks, where it is treated with sulphate of alumina, lime, and protosulphate of iron, passed through carbon filters, which are cleaned and charged from time to time, and then run through an open channel about a mile in length with a moderately rapid current, before falling into the River Lea. Specimens of the vegetable and floating organisms found in the various localities within the influence of the sewage were carefully collected and examined under the microscope, with the following results:

1. An olive-green substance floating on the precipitation tanks themselves. This consisted chiefly of an algoid growth of various kinds, principally enormous masses of Oscillaria in a more or less completely decomposed state. The source of these algæ it is difficult to surmise. It also contained decomposing animal and vegetable matter in great variety, but even

after the lapse of two days no living animal or vegetable organisms. After four days it began to swarm with animal life and bacteria of all kinds.

2. Green algoid growths from the effluent water, ditches in connection with its lower part, and from the Lea itself both above and below the influx of the effluent water. These did not differ from one another in any essential points, consisting chiefly of various Confervæ and Cladophoræ, either living or in a more or less advanced stage of decomposition; together with a small quantity of a white organism to be hereafter mentioned. The gatherings all swarmed with prodigious quantities of animal life of the kinds usually met with in running and stagnant water, Rotifer, Vorticella, Paramecium, &c.

3. A brown floating matter found in patches on the effluent water, the ditches in connection with it, and on the Lea below the influx of the sewage effluent. It consisted of highly carbonaceous vegetable matter in a more or less advanced stage of decomposition, of the kind usually found on the surface of water in peat-bogs, &c., a fact quite accounted for by the peaty nature of the soil, where the bottom and sides of the channel were not bricked over. There was in it but little living vegetable (algoid) matter; nor could I detect animal membrane or other substances necessarily of fæcal origin. There were, however, abundance of bacteria, and of spore-like organisms, to be hereafter alluded to.

4. Large masses of greyish-white flocculent substance, found chiefly in the effluent water, but also in smaller quantities in the adjacent ditches and in the Lea. This is the substance the nature and properties of which it was specially desired to determine. It is well known to sanitary engineers, under the name of "sewage-fungus," as a constant occurrence in water contaminated with sewage under purification, but no report on it seems hitherto to have been made from a botanical point of view. I found the flocculent masses to be composed of immense quantities of filaments of an organism which I identified as *Beggiatoa alba*, Vauch, or a closely allied species. It differs from the description and figure of this species in Zopf's 'Spaltpilze,'[1] in the filaments being septated and branched, and frequently con-

[1] 'Encyklopaedie der Naturwissenschaften,' 1te Abtheilung. 'Handbuch der Botanik,' 12te Lieferung, Breslau, 1883.

stricted below the septa; but I hesitate, without further investigation of its life-history, to set it up as a distinct species. It agrees with the typical form in other respects, and especially in the very remarkable property of containing in it a number of very bright, highly refractive globular bodies, which have been determined by Profs. Cohn and Cramer to consist of pure sulphur.

The systematic position of Beggiatoa is obscure. Zopf admits it, apparently without hesitation, among the Schizomycetes, and it agrees with these organisms in occurring in various conditions as the vibrio and coccus state; the spore-like organisms found among the brown floating matter being probably the latter, though I was not able to trace their genetic connection. The ordinary form may be described as the leptothrix state. But Beggiatoa is, on the other hand, clearly closely connected with the Oscillatorieæ through Crenothrix (if this genus can be maintained), appearing to differ from them only in the absence of chlorophyll, and I very much doubt whether this is constant at all times of the year.

The difficulty of assigning Beggiatoa either to the algæ or fungi is avoided if we adopt a modification of Sachs' classification of the Thallophyta, viz. into three classes, Algæ, Fungi, and Protophyta, when it must come under the last.

Beggiatoa alba is stated by German writers to be frequent not only in water containing sewage, but in the effluent from (beet-root) sugar factories, tanneries, and other manufacturing processes, and in mineral, especially thermal sulphur-springs. I have myself seen it on the waste ground in the neighbourhood of alkali works.

The mode by which this organism extracts the sulphur out of the water, and its effect on the purification of the sewage, become very interesting questions. From its constant presence in highly mineralised springs, I am inclined to think that the source of the sulphur in the sewage effluent is rather the sulphates used in precipitating the sewage than the sewage itself. It is true that if entirely destitute of chlorophyll it must be altogether dependent for its nutriment on organic substances in the water. But I have reason to doubt whether this is the case. Even at the time when I examined it (Feb. 9), when vegetation is most sluggish, there seemed to be indications of

the presence of chlorophyll in small quantities, which would probably be much greater in spring and summer. Luerssen[1] states that it has the power of developing sulphuretted hydrogen out of the sulphates in the water. But it is very difficult to reconcile this with its evident power of separating pure sulphur. There can be no doubt that neutral sulphates are decomposed by organic matter with separation of sulphuretted hydrogen or formation of sulphides, witness the constant formation of protosulphide of iron in water containing decaying vegetable matter. But as sulphides contain a larger percentage of sulphur than sulphates, this is incompatible with the coincident elimination of sulphur. Granting that both sulphides and sulphites are formed in the water, we could get free sulphur by a mutual decomposition of sulphurous acid and sulphuretted hydrogen thus; $2H_2S + SO_2 = 2H_2O + S_3$.

The growth of the so-called "sewage-fungus" may therefore be regarded as an undoubted evidence of the presence in the water of an abnormal amount of sulphates in solution, derived either directly from sewage, or from the substances used in precipitating it. But there seems no reason to believe that it will itself have any injurious effect on the water. It is worth noting that abundance of fish live in this channel. I have seen minnows two inches long taken out of it; and I believe there are plenty of larger fish. It is difficult to see how the sulphur once set free can again combine with hydrogen to form sulphuretted hydrogen as long as the organism is growing in the water. Indeed, if allowed to accumulate and periodically removed, it may tend to purify the water by abstracting from it some of the undue proportion of sulphur. But the whole subject requires further investigation, especially I should like to see careful analysis of the ash of the Beggiatoa.

[1] 'Handbuch der Botanik,' Band i, "Krypotgamen," p. 26, Leipzig, 1879.

A CASE OF OSTEITIS DEFORMANS.[1]

By JOHN R. LUNN.

The name Osteitis Deformans has been given by Sir James Paget to a remarkable disease which he has described in the 'Med.-Chir. Transactions' of 1876. Mr. Bryant also described a case in the 'Guy's Hospital Reports' for 1877.

The disease begins, writes Paget, late in life; is somewhat slow in its progress, may continue for many years without affecting the general health, and gives no more trouble than that which is due to the changes of the shape, &c., of the diseased bones. He also states that the affection is not associated with syphilis or any other constitutional disease, unless it be with cancer.

William W—, æt. 70, single, by trade a hawker, was admitted into the Marylebone Infirmary, July, 1883. He had been in the workhouse eight years. He said he had always enjoyed good health and had never suffered from gout or syphilis. All his family were healthy as far as he could remember.

On admission he complained of rheumatic pains chiefly in the right hip and thigh. He looked pale and cachectic and was about five feet two inches high. His chin seemed lower than the top of his sternum, and his head hung down as if too heavy for his body. No deformity was observable in his face. The clavicles were slightly enlarged. Right humerus slightly twisted outwards and thickened. Spine twisted and curved

[1] The skeleton is now in the Museum at St. Thomas's Hospital.

laterally. Right femur was rotated outwards and felt much thickened; left femur seemed similarly deformed but to a less extent. Both tibiæ were slightly thickened and very prominent, especially the left. There was no apparent inequality in the length of the lower limbs. No visceral disease. No albumen in urine. The patient steadily lost flesh and became weaker; at first he could walk about, but he became by degrees quite confined to bed, generally lay on his right side, and in time bedsores formed over the sacrum. He was not able to get complete rest from the heavy aching pains and weariness in his limbs, which were rather severe and formed his only complaint. As he became weaker, he grew sleepless at night and drowsy by day, taking but little notice. His mind wandered, and he had occasional hallucinations of fear and delusions of suspicion. He finally died of exhaustion October 20th, 1883. Some weeks before he died he got œdema of his right lower limb, which was due to a tumour situated in the groin and right iliac region, and fixed apparently to the tissues around.

Post-mortem examination (fifty-four hours after death).—Body emaciated, great œdema of right lower limb. Rigor mortis passed off. Rib cartilages calcified, but soft and brittle, and easily cut.

Head.—Skull enormously thickened, from two to three times as thick as in health, rather soft and porous. Dura mater normal.

Brain shrunken, apparently from diminution of cranial cavity, for the convolutions were small and approximated, and the lateral ventricles were diminished in size. The hemispheres were symmetrical. No lesion of any part detected.

Heart.—A little fluid in pericardium. Heart much enlarged, walls greatly thickened, especially those of the left ventricle. Valves competent. Flaps of mitral and aortic valves calcified near their attached borders. Cavities contained dark, soft clots. Aorta much dilated and atheromatous.

Lungs of average size; œdema of both; a few ounces of serum in right pleural cavity.

Spleen 15 oz. in weight, large and soft on section, red, and very pulpy.

Kidneys of normal size and structure.

Pelvis.—A large brain-like tumour occupied the right

iliac fossa, springing apparently from the brim of pelvis, just above the acetabulum at junction of pubes and ilium. It was globular and smooth on its free surface and covered with peritoneum. It had displaced the iliacus muscle, and had caused absorption of much of the ilium, viz. the anterior third of the iliac crest and the brim of the pelvis adjacent, so that the outer part of the acetabulum was friable and nearly destroyed by the soft new growth. The growth extended down beneath Poupart's ligament, close in front of the pelvic bone, nearly to the lower border of the ramus of ischium, and caused a large prominence at the upper part of anterior surface of thigh. The femoral and inguinal glands contiguous to it were swollen and hard, and the femoral vein was adherent to it, swollen, thickened, and blocked for about five or six inches by a rather recent black thrombus. On section the tumour was found to be soft, fleshy, vascular, and mostly solid, though partially cystic, there being a large cyst in the upper part containing clear fluid, which probably accounted for the recent rapid enlargement of the tumour. There was a small superficial nodule on the right scapula.

Spine was seen from the front to be much twisted and curved in the lumbar region, and the vertebræ seemed broad and projected to the left. In the dorsal region the convexity was towards the right.

Right-hip-joint.—Acetabulum partially destroyed; cartilage absorbed over diseased bone, and also eroded over head of femur in corresponding position. There were several small osteophytes on the neck of the bone. The right femur seemed much thickened and enlarged, as did the left though to a less extent.

Description of the Skeleton. By Mr. Charles Stewart, Curator of the St. Thomas's Hospital Museum.

The parts affected are generally increased in bulk and have assumed a light and porous character. The external surface of the diseased bone and the walls of the medullary cavities are in some places porous, but are mostly formed by a thick layer, having a dense white and ivory-like appearance. The

normal cancellous bone is replaced by one of a more dense and uniformly porous nature.

Skull.—The disease chiefly affects the frontal, occipital, and parietal bones; the maximum thickness being in the frontal and occipital regions, where the inner table measures 13 mm. and the external 9 mm., the diploe being faintly indicated. The grooves for blood-vessels on the inner surface are deepened. The base of the skull is nearly free from change. The temporal bones show some increased porosity in places but no thickening; the sphenoid increased porosity and slight thickening. The ethmoid, superior and inferior maxillæ, malar, nasal, and turbinal bones, and the vomer are free from disease. All the sutures with the exception of the squamo-parietal are obliterated.

Spinal column.—The whole length of the spine shows characteristic changes, but they are most marked in its lower half. Bony processes from the margins of the bodies arch over the intervertebral discs and are frequently blended together. There is also extensive ossification of the fibrous tissue connected with the spinous, articular, and transverse processes. By these means the sixth, seventh, eighth, and ninth dorsal vertebræ are united; the tenth and eleventh are ankylosed, ossification of the interspinous ligament forming a broad plate of bone, and the arches being completely fused; the body of the tenth is much wasted causing angular curvature. The twelfth dorsal and first lumbar are free; the second, third, and fourth ankylosed together, and the fifth ankylosed to the sacrum and innominate bones.

Ribs.—The ribs are only slightly affected, chiefly at their extremities; at their sternal ends many show ossification extending from them into the perichondrium.

Costal cartilages.—These show numerous patches of bone formed by ossification of the perichondrium.

Sternum.—Slightly rougher than normal, junction of manubrium and gladiolus still cartilaginous, ensiform process ossified.

Right scapula.—Head, coracoid, and acromion processes, free edge of spine, and axillary border, slightly affected.

Left scapula.—Same parts diseased but much more so, especially the spine and acromion; the venter is also somewhat affected.

Right clavicle not increased in size, but light and with bony outgrowths on outer third.

Left clavicle increased in size and with osteo-porotic features well marked.

Pelvis.—The fifth lumbar vertebra is ankylosed to sacrum and with it to the ilia. The transverse ligaments of the hip-joints are ossified, and numerous bony outgrowths spring from the margins and processes of the bones. A soft tumour rises from the interior of the right ilium close to the acetabulum, forming a chamber (70 mm. by 35 mm.) opening into that cavity, and appearing above the bone as a projecting mass. The plane of the ilia is abnormally flat, all parts show advanced conditions of the disease.

Right humerus.—Head and middle two thirds of shaft chiefly affected, lower extremity nearly normal.

Left humerus.—Head and upper two thirds of shaft affected, lower extremity normal. Right and left ulna and radius nearly normal.

Hands.—Slight bony outgrowths near extremities of meta-carpal bones and phalanges, otherwise normal.

Right femur.—The condyles alone appear normal or nearly so. The shaft is much increased in size, especially from side to side; at the middle it measures 62 mm. in diameter. Head and neck at right angles to shaft.

Left femur.—90 mm. of lower end not enlarged, cancellous tissue normal but surface somewhat too porous. The remainder in same condition as the right. A section shows the medullary cavity to be enlarged, its surface irregular and formed by bony buttresses and plates, having a dense, smooth, ivory-like surface; some small masses of finely porous bone are seen here and there. The cancellous tissue of head and neck are replaced by osteoporotic bone.

Right tibia.—Not increased in size, but light and with porous surface; the internal facet is depressed, and a few slight bony outgrowths roughen its upper extremity.

Left tibia.—Rather more than half the lower extremity of the shaft is increased in size, and measures 17 mm. in diameter; in front the surface is porous, but behind a thin layer of ivory-like bone covers its exterior.

Fibulæ nearly normal, surface only slightly roughened.

Patellæ light, otherwise normal.

Feet in same condition as hands.

Dr. Sharkey examined microscopically the occipital bone and the tumour from the ilium, and the following is his report:

The most striking points in sections of the occipital bone are (see Plates V and VI):

1. The irregularity in the anatomical structure of the bone.

2. Absorption or rarefying ostitis appears to be the predominant process, producing very large and very irregular Haversian canals, which present Howship's lacunæ as well as much larger indentations in their walls. They are lined by a thin layer of tissue which stains with logwood, as is usually the case in rarefying ostitis.

3. The bone corpuscles are distributed with great irregularity, presenting for the most part no arrangement in parallel lines.

4. The bone lacunæ are mostly small, shrunken, and supplied with but few processes.

5. There is but little appearance of the natural lamellar arrangement in the walls of the Haversian canals, and where lamellæ are seen they are ill defined, and many having different directions meet together in the walls of one Haversian canal.

6. There is also clear evidence of a formative ostitis, seen in the reduction of some Haversian canals to the smallest calibre, and in some parts the parallel lamellæ of new bone which have produced this change can be clearly made out.

7. Besides the lines in the walls of the Haversian canals, which are due to their lamellar arrangement, there are others quite irregular in appearance, and consisting of series of curves, which cross each other, or else follow more or less the direction of the lamellæ. The nature of these lines is not evident.

The portion of the tumour from the ileum which was given me to examine, presented the microscopical characters of cartilage throughout. Nowhere was any sarcomatous tissue seen.

Remarks.—The case just described is a good example of an interesting and rather uncommon disease. Its interest depends upon the remarkable and characteristic deformity, which is very noticeable during life, and the disease being "all on the outside," as well as chronic and comparatively painless, is well

adapted for clinical observation. The skeleton too makes a good museum specimen.

Bones from cases of this disease of more or less ancient date may be found scattered about in museums, but they have been observed in a vague and piecemeal way, and confounded with deformities due to other diseases or to accidents. Sir J. Paget (who described the condition in 1876) was the first to recognise it as a distinct disease, putting all its symptoms together, observing its course, and showing it to be distinct from previously known affections. Since his first series of cases was published, so many other instances have been recorded by different persons that the subject may be said to have lost some of its novelty. But still its essential nature remains as obscure and disputed as ever. I think, however, by looking at the phenomena of this case, a few points in the history of the disease may become clearer, even though no insight be gained into its fundamental pathology. The principles of mechanics will help to explain how the deformity arose.

The first fact that strikes the eye is the curvature of the long bones of the lower limbs, and the bending and crushing as it were of the spinal column. This is evidently due to the superincumbent weight of the body, and we may draw the conclusion that at some previous time the bones of support had lost their normal strength or solidity. If we look at the bones themselves to see how to account for their weakness, we find a definite change in their structure, sufficient, I think, to explain this yielding; in fact, a great part of the natural firm bone has disappeared, and in its place is a large quantity of porous and spongy bone. This new bone is firm enough, though clumsy in appearance, and would not be likely to bend. The most reasonable explanation is that the bones gave way and altered in shape while the natural bone was being removed, and that the latter was subsequently replaced by spongy bone.

The morbid process was nearly universal, but its chief stress seems to have fallen upon the bones about the main axis of the body, the cranial vault, spine, pelvis, and long bones of the lower limbs being most damaged, the face, fingers, and toes least. The absorption and disappearance of the original bone seems to have been the primary event in the course of the disease, and this must have taken place not by

any coarse process, but by very delicate interstitial changes. The latter have affected not only the compact tissue of the shafts, but also the cancellous tissue of the extremities of the long bones and the short bones.

The formation of the porous bone must be regarded as secondary, but how is its presence to be explained? Is it too much to assume a remedial effort of nature to compensate for the weakening of the bony supports? for the same thing may be seen in the curved bones of Rickets and in the formation of callus after fractures. In fact, the new bone of Osteitis Deformans bears a close resemblance to callus. Further evidence of this being the true explanation is seen in the irregular way in which it is distributed in places exposed to movement, strain, and friction, *e. g.* in and about the vertebræ and hips. The thickening of the cranial walls seems the most difficult to explain as a natural compensating process, but the high degree it reaches may be accounted for by the large area of periosteum in proportion to the size of the bones. The lengthening of certain of the long bones, if real and not merely relative, could of course be explained as a too copious throwing out of callus. Against the supposition that the formation of new bone is primary, is the fact that places escape ossification which are naturally the seats of it in advancing age, *e. g.* the rib cartilages and mid-sternal joint.

What can be the nature of the morbid process which produces such anatomical alterations? Sir J. Paget regards it as a kind of chronic osteitis, but I think this view is untenable without too elastic a use of the term inflammation; for there is no fever and no intercurrent attacks of periostitis or other acute inflammation occur during the course of the disease; besides, anatomically, the appearances are not those of inflammation.

In comparing osteitis deformans with other diseases, I would of course distinguish it from multiple exostosis; for in this the new bone is a mere addition not a replacement. Nor must the curvatures of Osteitis Deformans be mistaken for those of Rickets; for except that they are both due to giving way of weakened bones under strain, weight, or other pressure, the two conditions present no resemblances. Rickets being due to imperfect formation of bone during periods of growth only affects the growing ends and begins early in life; whereas

in osteitis deformans there is an atrophy of bone already long developed, and consequently the curves are in different places. The only diseases with an apparently real affinity to osteitis deformans are:

1. Atrophy of bones in general paralysis, a condition which is more or less common, but only partial, and in which the bones show brittleness but no consecutive hypertrophy.

2. The disease most nearly allied to osteitis deformans I would take to be osteomalacia, which is equally general and consists in a process of osseous absorption, probably identical in nature but more severe, so that the destruction being greater and more rapid, there is no time for the mechanical rectification of the bones by compensatory overgrowth. In a few mild cases, however (*vide* Billroth), some small scattered osteophytes are found. Both diseases are probably of constitutional origin, though their causes are quite unknown; both end at last by a fatal cachexia, though each is liable to be aggravated by certain complications.

Thus death in osteitis deformans may perhaps be accelerated at last by compression of the brain, from thickening and internal growth of the cranium, or the growth of new bone may be so active as to burst through all restraint, and result in the formation of well-defined tumours, as was the case in some of Sir J. Paget's cases as well as in the one here recorded.

If the view contended for in this paper be correct, then osteitis deformans consists of—

1. Constitutional disease producing atrophy and absorption of a large part of the osseous system.

2. Consequent weakening of the bones, so that they yield when exposed to strain.

3. Compensatory strengthening by the growth of what may be looked upon as a variety of callus.

4. The occasional formation of definite tumours.

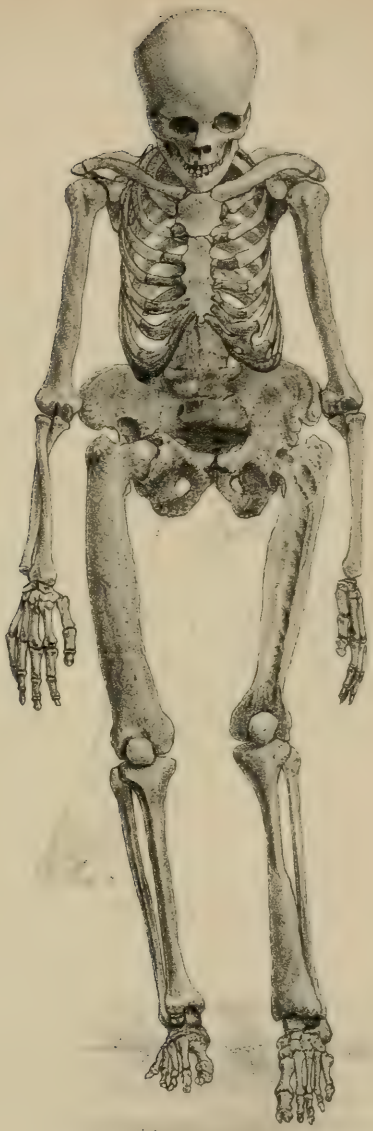
5. A fatal cachexia.

I am indebted to my late colleague Dr. F. L. Benham for the able assistance he has given me in the preparation of this paper, as well as to my friends Mr. Stewart and Dr. Sharkey for the descriptions which they have supplied me with.

PLATES I—VI,

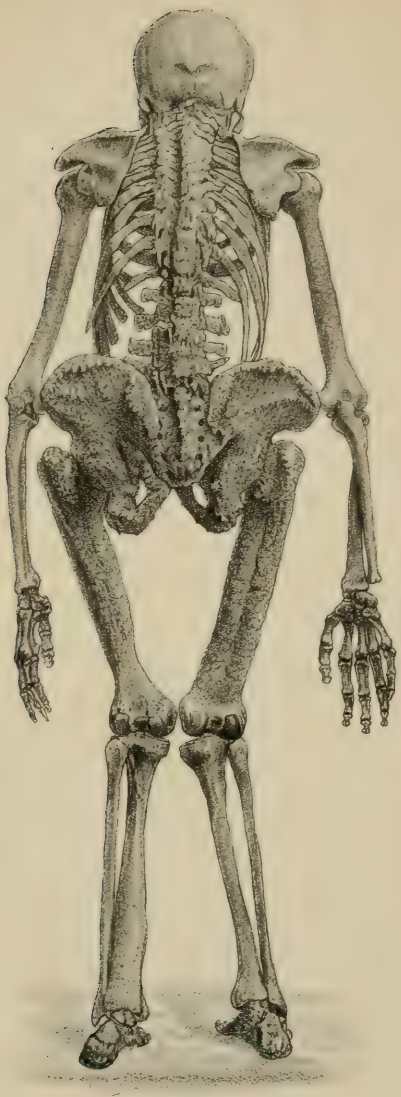
Illustrating Mr. J. R. Lunn's Case of Osteitis Deformans.

PLATE I.—Front view of skeleton.
II.—Back view of skeleton.
III.—Lateral view of skeleton.
IV.—A. Right femur.
B. Longitudinal section of left femur.
V.—Section of occipital bone under low magnifying power. (× 40 diam.)
VI.—Section of occipital bone under high magnifying power. (× 333 diam.)



R. Muntern lith.

Muntern Bros. imp.



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R. Mintern lith.

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R. Mintern lith.

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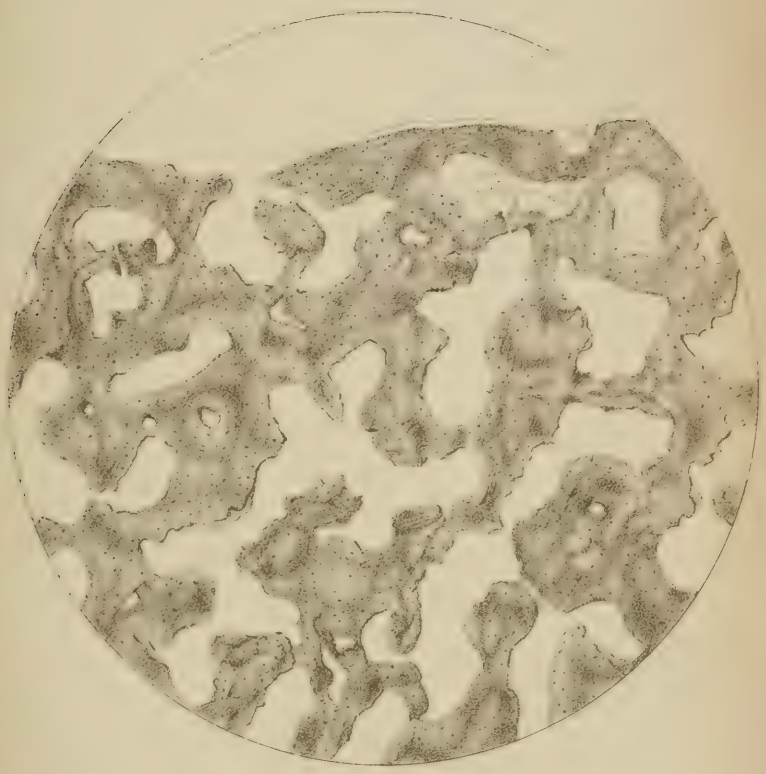

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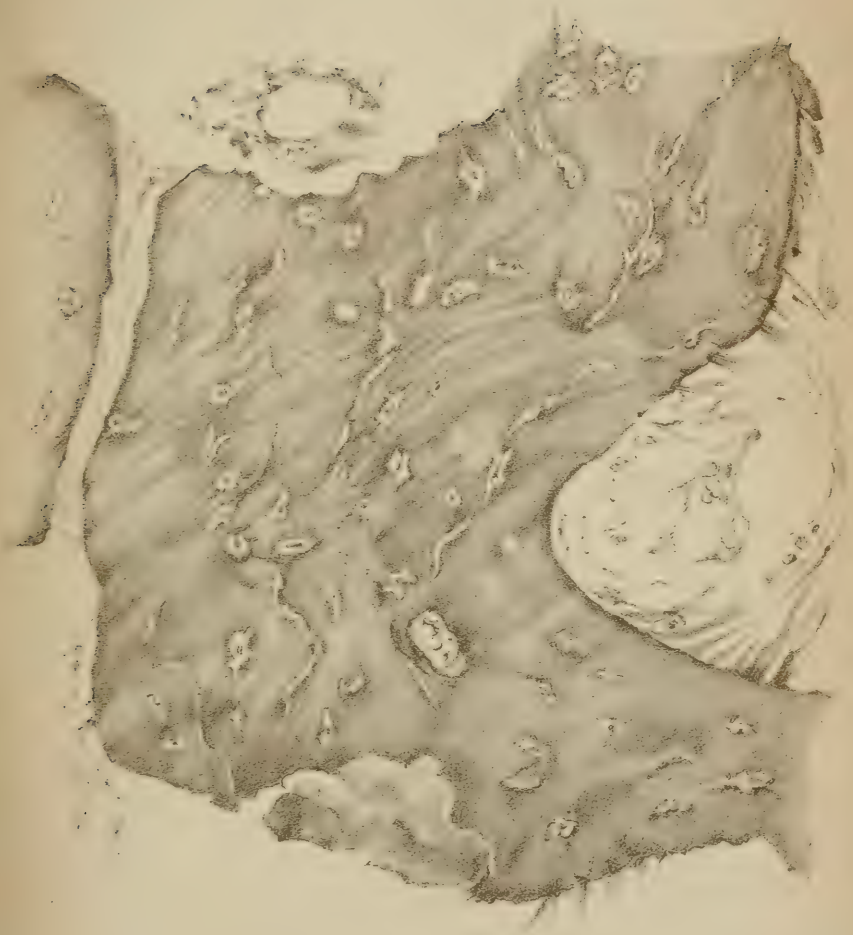
C. Stewart del.

Mintern Bros. lith.



× 333 Diam.

THE EFFECTS

OF

ELECTRICITY UPON THE CIRCULATION,

LOCAL AND GENERAL.

By WALTER J. KILNER, M.B., M.R.C.P.

It is well known that electricity produces changes in the circulation when applied medicinally to a patient, but the accounts given are hard to reconcile, the discrepancy depending seemingly upon the different conditions in the application of the current. A few years ago I made a large number of experiments upon several of my friends, and since then from time to time I have added to the number.

To ascertain the effect of the current upon the general circulation the method adopted was to take a tracing of the pulse at the radial before, and from time to time during, the passage of the current, this being applied to different parts of the body. No two series of tracings were taken the same day.

In many cases, and from these alone are my conclusions drawn, the arm was carefully fixed while a Pond's sphygmograph was placed upon the radial, this being also made immoveable, so that there should be no variation from any involuntary movement. In other experiments the instrument for different reasons could not be so perfectly fixed, although as much care as possible was taken to avoid errors. These experiments were mainly used for corroboration, but sometimes

when the person operated upon was an invalid, they had to be relied upon. From tentative experiments it was found that the experiments which gave the most trustworthy results for comparison were those obtained by keeping the pressure of the instrument the same throughout the series, although each separate tracing might have been improved by regulating the pressure. In most instances the first tracing, the one recorded before the administration of the current, was as perfect as could be obtained, although sometimes I altered the pressure slightly to allow the tracings later on in the series to be better marked at the expense of the first tracings.

When sparks are taken from a frictional machine or a large induction coil, after a shorter or longer time redness and a papular rash surrounded by a red areola make their appearance. These papules are evanescent, rarely lasting more than an hour. There is no effect upon the general circulation.

The induced current acts upon the blood-vessels of the skin first contracting then dilating them. This is clearly seen by the skin becoming paler and subsequently turning red. The redness is strictly local, being confined to the part touched by the electrodes, or at most extending a very short distance around. The time for the production of the redness depends upon the strength of the current, the part of the body to which it is applied, the dryness of the skin, and personal idiosyncrasies. The two poles cause a slight difference in the amount of redness, the negative acting more quickly than the positive provided they are placed upon portions of the skin of equal delicacy and the size of both electrodes is alike. Ultimately the redness produced by the two poles becomes equal. The current also contracts the arteries a short distance beneath the skin, as is illustrated by the tracing (Pl. VII, fig. 1) taken over the radial when the current was applied directly beneath the sphygmograph, by placing a piece of moistened lint between it and the skin and connecting the lint to the induction coil. A is taken before the passage of the current, B five seconds afterwards. In no instance have I found the arterial contraction to last more than twenty seconds.

Although the local action of the induced current is very slight, much less than that of the constant current, the action upon the general circulation is not only great but also quick ;

the effect, however, is only transient. Whilst the current is passing the pulse-rate becomes slower although occasionally at first it may be slightly quickened, seemingly more from the suddenness of the action than from the effects of the current itself. With the decrease in rate, occasionally a feeling of faintness comes over the patient, but only once have I seen any really serious symptoms. This was in a lady about sixty years of age suffering from pleurodynia and who had weak action of the heart. The pleurodynia was relieved very quickly, but she kept fainting off and on for more than half an hour, her pulse becoming almost imperceptible. The current had only been applied for about two minutes.

The lengthening of the pulse beat depends upon the prolongation of the diastole and pause while the systole remains unaltered. The only common exception I am aware of is that this current produces an acceleration of the pulse during parturition in the intervals of the uterine contractions, while during them it is diminished.

In conjunction with the retardation the current always (and I have never met with an exception) lowers the arterial tension, so much so that not unfrequently it causes the pulse to become perfectly dicrotic, and in a few cases markedly hyperdicrotic; occasionally, however, when the current has been passing for some time the arterial tension, especially when there has been a great fall, rises, but never, so far as I have observed, to the original extent (Pl. VII, fig. 2). A curious point is that a strong current does not seem to act more quickly or more powerfully than a weak one; in fact, I have obtained a marked change by the application of a current merely to the wrist of the right hand while the sphygmograph was applied to the left, this being so weak as to be almost imperceptible except on the tongue. I possess one tracing showing a change in the circulation in ten seconds after the commencement of the administration of the current. Another interesting fact is that should the pulse be irregular in the strength of the different beats or intermittent these variations will as a rule remain (Pl. VII, fig. 3). Besides, it does not signify upon what part of the body the electrodes are placed. For example, I have tracings showing the same changes occurring whether the current has been passing through the head, neck, trunk, or limbs. During illness the

same changes take place as during health, after allowance has been made for the state of the arterial tension.

The constant current in a short time induces a redness of the skin at the places where the poles are situated. This is more marked and commences earlier at the negative than the positive pole. When a very weak current is employed the redness may be hastened by the reversal of the current. This effect may be attributed to vaso-motor nerves passing quickly from the so-called catelectrotonic to the anelectrotonic state and *vice versâ*.

This erythema usually disappears shortly. In a few cases, instead of the contraction of the vessels commencing directly after the withdrawal of the constant current, dilatation remains or even increases, the resulting action being either an eruption or else hæmorrhage. The first is said to occur at the negative pole, but the only case I have seen was at the positive. The patient was a middle-aged woman, and the electrode, a sponge soaked with salt and water, placed so as to influence the brachial plexus. In this case the rash was not confined to the place just beneath the electrode but spread for some short distance around. It was only discovered by accident some hours after the administration and lasted for a few days. It happened twice after two successive *séances*, while from those before and after (the strength of the current remaining the same, viz. four milliampères) there was no semblance of a rash. It requires only a slight increase of intensity to complete the rupture of the blood-vessels. Dr. Althaus has published an unique case of a gentleman, aged 73, where one electrode was placed in the auriculo-maxillary fossa and the other on the spine (unfortunately he neither gives the strength nor the direction of the current) to influence the cervical sympathetic. It was only at night while taking off his collar that the patient discovered his neck had been bleeding, having felt neither pain nor discomfort. The parts to which the electrodes had been applied were not unusually red after the administration. The only analogous case I have seen occurred shortly after an application of the current (about 4 milliampères) to the uterus for about five minutes, the direction being constantly reversed a flow similar to the menses came on and lasted for a few hours. The same current was employed several times before and

after without any similar effect. This lady's monthly period was not expected until, and it came on in, a week's time. There was no hæmorrhage immediately after the *séance* nor was the current felt much in the uterus.

These changes are clearly marked upon the surface, yet the tissues beneath the epidermis undergo similar. These, however, cannot be ascertained directly, but the alteration in the resistance before and after the passage of the current affords a means of detecting them. The exact method is described elsewhere ('Lancet,' September, 1883). For instance, in a case of musculo-spiral paralysis, the tissue beneath the epidermis offered a resistance of 4668 ohms, but after the passage of the current the resistance was reduced to 4030 ohms. This difference we consider to be almost entirely due to the dilatation of the blood-vessels. This diminution of resistance under the influence of the current can be used as a means of detecting the state of contraction of the local blood-vessels. Although there are great variations during health, these may be greatly augmented during disease. As an instance, we may take a case of peripheral paralysis in the earlier stages, when it is found that the difference of the resistance before and after the passage of the current is less than that obtained by the same process on the healthy side; but as on each side the resistance can be made equal, the conclusion arrived at is that on the diseased side the blood-vessels are in a state of contraction but they are capable of being fully dilated. As time goes on, the resistance in the first instance is greater and diminished less after the passage of the current on the diseased limb than on the healthy, pointing to the fact that the blood-vessels are still in a state of contraction, and that they are either incapable of dilating to their normal extent or else that the dilator nerves are paralysed.

In cases of old-standing hemiplegia, on the other hand, we have found that the comparative, although not actual, difference of resistance before and after the current on both the healthy and diseased side to be equal, showing that the state of the blood-vessels is similar on the two sides and that the vaso-motor nerves respond naturally to the current. However, the dilatation of the blood-vessels often takes place more quickly on the affected than on the sound side.

The constant current, independent of the direction, when applied to any part of the body, unless the electrodes be placed so as to influence some central portion of the nervous system, does not produce any effect upon the general circulation. The current, however, may affect the general circulation when any of the large vaso-motor centres are influenced. Fig. 6 shows a series of tracings taken from a healthy man when the positive electrode was placed on the forehead and the negative on the neck so as to affect the medulla as much as possible. The strength of the current was 2·0 milliampères. A was taken before B, C, D, during the application, E, F, G, after the current had been stopped. At first the pulse-rate was quickened, reaching its acme in about three minutes then becoming slower. The current was only applied nine minutes as it began to cause distress. The arterial tension was at first considerably lowered but gradually rose during the passage, but not to the same extent as before. After the cessation of the current (a fact which is important as explaining the rare cases of hæmorrhage) the tension still rose, the maximum being attained in about three minutes. The tracing B shows that the increase in rapidity is due to the shortening of the diastole, while afterwards in C the systole was decreased in a similar ratio.

This local increase of blood to a part affords an explanation of the dizziness and tendency to fall when the electrode, especially if negative, is placed by the side of the head, particularly in the auriculo-maxillary fossa, and the other anywhere on the body; the explanation being that the disturbance of the circulation produces an alteration of the pressure in the semicircular canals. No or only slight dizziness is caused when one electrode is placed on the forehead and the other on the nape of the neck.

Thus we may say that the constant current has very great local effects upon the blood-vessels and none upon the general circulation, while the induced current has much less local action but exerts a very great power over the general circulation, lowering the arterial tension. The only hypothesis I can offer explaining the difference of action between the two currents is that in the one there is a low and in the other a high electromotive force. And in order to understand how this makes a difference we must bear in mind the law of divided circuits, viz. that the current in each conductor is inversely proportionate

to the resistance; and as in the body we may consider the current to make an infinite number of paths of different distances and resistances in approximate curves between the two electrodes, and as in each case the currents obey the same law, the induced current will propagate a stronger current through a distant part than the constant current in the same ratio as the electromotive force of the former is greater than the electromotive force of the latter. But as it is only when a current passing through a structure has sufficient strength to produce any recognisable physiological effects, we can easily comprehend how the induced current will influence a distant nervous centre while the constant current cannot. The following helps to prove this. Suppose a strong constant current (medicinally speaking) is applied to the lower arm the sensation is restricted to that part, but when a strong induced current is similarly applied it will be felt as well in the upper arm.

The heart does not seem primarily influenced by the induced current, as the change in rhythm seems to depend upon the alteration of the diastole and pause, only the systole remaining unchanged, this being compatible with the change being secondary to the general lowering of arterial tension. Further, when the heart is beating irregularly the irregularity still remains (Pl. VII, fig. 3).

As we have before noticed, there is good reason for supposing that the blood-vessels during certain spinal diseases and peripheral paralyses, *e.g.* infantile paralysis and musculo-spiral paralysis, are in a state of contraction, and that the current can dilate them. This goes far to prove what has long been suspected but not experimentally determined, the existence in the limbs of actively dilating vaso-motor nerves; without these the chronic state of contraction of the arteries must depend upon a continual irritation of the contracting vaso-motor nerves, which is unlikely because this contraction occurs under conditions which are unfavorable to irritation. If it be once conceded that dilator nerves exist, it is possible to advance a step further and say that they are in intimate connection with, if not contained in, the large nerve trunks, and from the fact of the contraction of the blood-vessels taking place so quickly and completely in infantile paralysis, it seems not at all improbable that

the giant cells in the anterior cornua of the spinal cord exert a great power over them. But whether they exist or not there can be no doubt that the state of the blood-vessels must contribute largely to the rapid degeneration which occurs in infantile, and to a less extent in peripheral, paralysis. If there be no dilating nerves, we are forced to the conclusion that the dilatation of the blood-vessels by the current is due to the paralysis of the contracting nerves, and if so the current acts in a different manner in the case of these as compared with any other nerves, being in the ordinary way a stimulant. But even if it be granted that there are dilating as well as contracting vaso-motor nerves, the difficulty still remains why the current should dilate rather than contract the blood-vessels. We are afraid we must beg the question by stating that the dilating nerves are more powerful in their action than the contracting, and the reason the local arteries contract first with the induced current is because the muscular fibres are directly acted upon and subsequently only through the medium of the nerves.

The therapeutical effects of the currents upon the diseased parts is such that it is impossible in the majority of cases to separate the beneficial effects dependent upon the alteration of the circulation from those produced by other qualities. Nevertheless, it may be advantageous to make a few remarks upon the question why sometimes one current may be preferable to the other, basing our observations entirely upon how they affect the circulation. Commencing with neuralgia, it will be found that both currents will cause relief, at least temporarily, but it will always be found that one current will produce a more speedy and prolonged relief, while occasionally one current will fail altogether. When choosing a current it is useful to bear in mind that the induced current will ease the pain more effectually whenever the part affected has a higher temperature than the surrounding surface, and if the painful part be of normal temperature the induced current is still likely to benefit more than the constant. On the other hand, when the painful part is cooler than the surrounding surface the constant current is far superior, as the following case will illustrate:

A. B—, æt. 32, was suffering from neuralgia in the knee and on the outer part of legs for about two months. Paroxysms often very severe. Unfortunately I forgot to compare the tem-

perature on the two sides, and applied the induced current without the least result. Then I found the painful part of limb cooler than the sound one, so tried the constant current. This gave almost instantaneous relief, which, however, lasted only for a few hours.

From its local action the constant current improves the nutrition of a diseased part whenever it is cooler, and the electrical resistance is greater than in health, while the induced current for this purpose is of little use. Thus it is frequently useful to apply for a short time the constant current as well as the induced in those cases where, from other reasons, the latter has been chosen. In infantile paralysis, for example, the induced current will produce little or no change, while the affected limb will become warmer and more rosy under the influence of the constant. When one extremity is passively congested from some nervous complaint, both currents will usually produce an improvement of the circulation, but generally the constant acts more satisfactorily than the induced. However, the reverse occasionally occurs.

C. D—, æt. 45, had an affection of the musculo-spiral nerve for two years, the muscles supplied by that nerve gradually becoming weak. His hand was congested and had a purplish hue. Upon application of the constant current to any part of the congested surface redness was produced slowly and imperfectly, but it was produced more quickly with the induced current; when the latter was first applied to the arm the effect was readily obtained. After a few applications the congestion vanished and the muscles began to improve.

When there is a high-tensioned condition of the general arterial system, be it chronic or acute, if simple lowering is likely to do any good the induced current will act beneficially, while the action of the constant is *nil.* A woman applied for treatment at the North Kensington and Kensal Town Dispensary as for some days she had not passed more than a wineglassful of urine in the twenty-four hours. There was general anasarca. I applied the induced current for about fifteen minutes to the spine, taking tracings from time to time at the radial (Pl. VII, fig. 4). The result was successful, as she went home and in an hour passed a quart of urine, and for that and the following two days a much larger quantity than pre-

viously although not the normal quantity. Three days afterwards the dropsy was less, and I then found, as I had previously suspected but been unable to verify, a large quantity of albumen in the urine. The same treatment was given with a still further improvement. The next time she came the quantity of urine was normal, and she did not come again. No drugs were used. However, some weeks afterwards, at the request of a friend who attended her, I visited her at her home and found her dying, hæmorrhage taking place from nose, mouth, ears, rectum, vagina, and even umbilicus.

For some time I have thought that the induced current might be used instead of nitrite of amyl, &c., in angina pectoris, but unfortunately I have never had an opportunity of seeing a case when I had a coil with me. However, during the last twelve months I have seen in some medical paper that this current has been used with the success I imagined.

PLATE VII,

Illustrating Dr. Kilner's paper on the Effects of Electricity upon the Circulation.

Fig. 1.—A. Normal tracing. B. After applying induced current five seconds to radial.

Fig. 2.—A. Normal tracing. B and C. Induced current between neck and hand, five and thirteen minutes respectively.

Fig. 3.—A. Intermittent high tensional pulse, before current. B. After five minutes' application of induced current, showing how the intermittency continues. One beat wanting in every six or seven.

Fig. 4.—A. Tracing before current. Rapid anasarca. Almost total non-secretion of urine. B and C. After one and five minutes' application of induced current to spine.

Fig. 5.—A. Normal Tracing. B and C. Application of constant current three milliampères to sympathetic. One electrode in each auriculo-maxillary fossa.

Fig. 6.—A. Normal tracing. B, C, and D. After application of two milliampères, positive pole on forehead negative on nape of neck for one, three, and seven minutes respectively. E, F, G. One, three, and five minutes after stopping the current.

Fig. 7.—A. Normal tracing. B and C. Application of two milliampères, positive pole to the neck and negative to forehead for five and twenty minutes respectively.

Fig. 1.

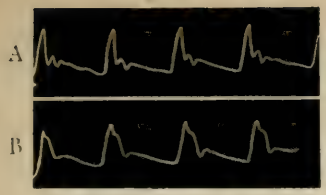


Fig. 2.

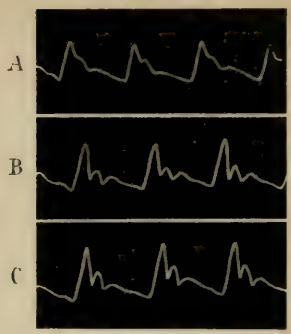


Fig. 3.

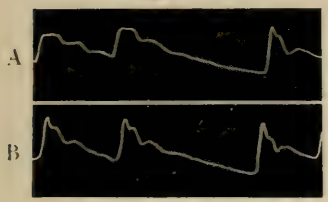


Fig. 4.

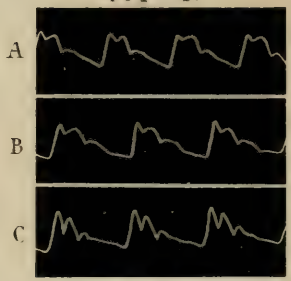


Fig. 5.

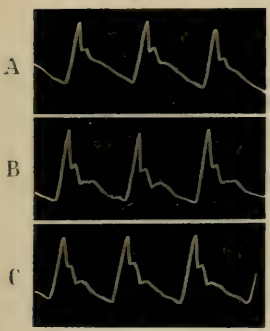


Fig. 6

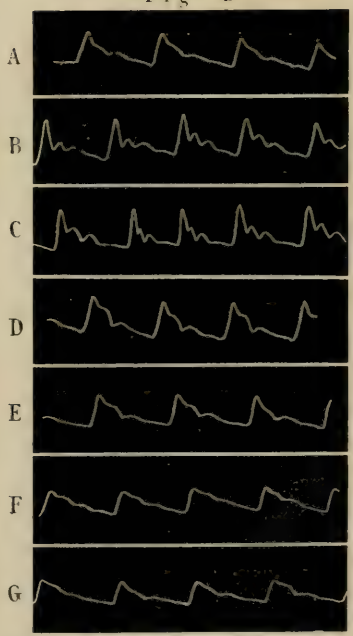
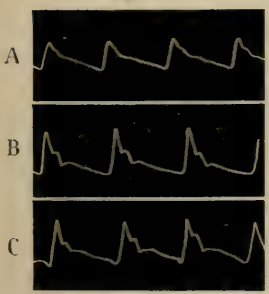


Fig. 7.



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TWO CASES

OF

GENERAL ATROPHY TREATED BY THE "WEIR-MITCHELL" METHOD.

By SEYMOUR J. SHARKEY, M.B.

Case 1.—M. A—, æt. 31, was admitted into St. Thomas's Hospital under my care on March 4th, 1884. I had at the request of some friends gone down to Woolwich to see her three months previously, and as soon as I could secure a small ward, which Dr. Stone and Dr. Harley very kindly put at my disposal, she was admitted.

She came from a family one or two members of which were the victims of nerve disease, and her father and mother were intensely religious. The patient lived alone with them, and in a domestic atmosphere which was rendered excessively gloomy, as even the clergyman of their parish impressed upon me, by an unnecessarily rigid discipline. She was never allowed to read any literature but the Bible and publications of various religious societies, so that when she came under treatment in the hospital I had considerable difficulty in prevailing upon her to listen to a novel by Thackeray, which I ordered the nurse to read to her. I made this addition to her ordinary literature simply as a therapeutic measure, and she soon began to relish the description of men and manners which it contained.

Her history was that she had never been very strong, and that ten years previously, without obvious cause, she had been "taken very sadly," had lost the use of her limbs and been unable to stand for fourteen days. She recovered in about five weeks, remained moderately well for one year, and then was troubled with a cough. She attended as an out-patient at Brompton for a while, was subsequently admitted as an in-patient and remained in the hospital for nine weeks. She did not lose the cough, however, and after leaving the hospital she took to her bed and remained there.

On admission into St. Thomas's she had been confined to bed for eight and a half years, never having walked further than across the room, and that with support. In the summer months she used to be dressed and carried downstairs. From the very beginning of her illness she had suffered much from vomiting, and it was often constant for considerable periods of time. She had likewise been subject to frequent "gatherings in the throat," and she used to bring up quantities of "matter and blood." The catamenia had been absent for eight years. The bowels were generally loose.

On leaving Brompton Hospital she weighed 7 st. 12 lb. in her clothes. On admission into St. Thomas's her weight was 5 st. 8 lbs. after allowance had been made for them. She was very thin and had a singularly heavy, melancholy aspect. Her hair was turning grey. She was almost completely powerless; she could not make the slightest movements of her legs or feet, nor could she rise in bed. If set upright in the sitting posture, she could not retain it for a moment, but tottered helplessly over. Sensation appeared to be everywhere perfect, and the various reflexes normal. Her organs presented no evidence of disease, but the throat and tonsils were relaxed. The tongue was rather dirty, the abdomen concave.

She was submitted to what goes by the name of the "Weir-Mitchell treatment," and after about nine weeks she left the hospital well. She could then even walk up and downstairs, and though not as strong as a healthy girl of her age, she gave every promise of soon being so. She had a very good appetite, slept well, and her bowels acted regularly once a day. The catamenia had returned, and her condition of mind had completely altered. She had become a lively, talkative girl, very

ready to joke, very active, and, as she said, she could hardly "keep still," being always anxious to be doing something.

The following were her weights at different periods:

March 4th.—5 st. 8 lb.

March 20th.—6 st. 5 lb.

April 4th.—6 st. 9 lb.

April 18th.—7 st. 7 lb.

May 2nd.—8 st. 1 lb.

So that she gained during treatment 35 lbs.

On admission the right calf measured 8¾ inches; the thigh (7½ inches above the upper border of the patella) 12¼ inches.

On April 3rd the calf measured 9⅞ inches; thigh 14½ inches.

On May 5th calf measured 11½ inches; thigh 17½ inches.

Case 2.—M. R—, æt. 31, was a healthy girl until she was fifteen or sixteen years of age, and had no very serious ailment before her nineteenth year, though she had always suffered from an irritable temper and periodical fits of depression. When nineteen she had a "very bad illness," during which she got extremely thin, as thin indeed as when she first came under my care. This attack lasted eighteen months, during which period she hardly eat anything. Finally, she was taken to Margate, and there very quickly acquired a good appetite and recovered completely in one month. The catamenia then appeared for the first time. She remained very fairly well for several years and took an active part in dancing and other social amusements. Three or four years before I saw her, however, one of her sisters fell ill in exactly the same way as she had done before. Her medical attendant informed me that he could see no difference between the two cases, and that the sister got gradually thinner and more helpless and died in two years. The shock of her death and the strain of nursing her quite upset the other; she ceased to eat except the smallest quantities of food and she gradually emaciated, lost strength, and became almost confined to the sofa. It was in September, 1883, after she had been about six months in this helpless condition, that I saw her in consultation at Woolwich. She was lying on a sofa, looking wan and listless; she could walk a little, but with difficulty. Her weight was 4 st. 6 lb. Her friends said that she took next to nothing in the way of nourishment,

and that she was quite unmanageable and had her own way in everything. Her catamenia had long been absent.

After some little difficulty the patient was persuaded to put herself under treatment, and she became an inmate of the Fitzroy Home on September 25th, 1883.

She was treated on the "Weir-Mitchell" plan and was discharged well on November 24th.

Her weights were as follows:

September 25th.—4 st. 6 lb.

October 12th.—5 st. 5 lb.

26th.—5 st. 5 lb.

November 9th.—5 st. 11 lb. 6 oz.

23rd.—6 st.

The total increase in weight was therefore 22 lb.

The reason she did not increase between October 12th and 26th was that the treatment had to be greatly modified on account of abdominal pain, constipation, and nausea, an attack which ended in the appearance of the catamenia.

When she left the hospital she had a good appetite, her bowels were regular, her spirits excellent, and she could walk fairly well. She went to Brighton and then to the South of France for some months, and she is now at home and well, though I believe that she has not gained flesh since she left the Fitzroy Home.

The treatment to which these two patients were subjected is what is called the "Weir-Mitchell" treatment, which Dr. Playfair introduced into this country comparatively recently and described in a small book called 'The Systematic Treatment of Nerve Prostration and Hysteria,' published in 1883. I have done nothing more than follow accurately the instructions given there as to the management of these cases, and it might perhaps be thought that as there is nothing in the history of my patients which is in any way peculiar or unrecorded in Dr. Playfair's book, I might have spared my professional brethren the infliction of an unnecessary paper. My excuse, however, is this, that many novel modes of treatment have been introduced with a great flourish of trumpets by their authors, and with long lists of successful cases, and have been subsequently found unsatisfactory or useless. It is only by the

practical experience of the profession at large that a just estimate can be formed of such new methods, and so many have been at first greatly extolled and then found to be delusions that medical men have become very sceptical. And if there is one department of therapeutics in which the profession is more sceptical than another it is that which treats of those functional diseases which are embraced under the term "hysteria." We have no real knowledge of their nature, and but little of the conditions which effect their cure: but we do know that a large proportion of them get well either without any treatment at all, or when treated in such various ways, that physicians would justly scout the idea of a specific cure, applicable to all cases. Medical men refuse nowadays to accept anyone's *ipse dixit* about such matters. Assertions are tested by the bedside, results are recorded, and upon the experience thus accumulated depends the acceptance or rejection of any vaunted line of treatment.

As far as I am aware the number of observers who have published their experience of the "Weir-Mitchell" treatment is not large, and I record my cases simply as a small contribution to the subject.

Dr. Playfair thus gives "the principal elements in the systematic management of these cases:"

"1. The removal of the patient from unhealthy home influences, and placing her at absolute rest.

"2. The production of muscular waste, and the consequent possibility of assimilating food by what have been called 'mechanical tonics,' viz. prolonged movement and massage of the muscles by a trained shampooer, and muscular contractions produced by electricity.

"3. Supplying the waste so produced by regular and excessive feeding, so that the whole system, and the nervous system in particular, shall be nourished in spite of the patient."

My two cases were both removed from their homes and sympathetic friends and relations, and placed in pleasant rooms under the charge of one nurse. The latter undertakes the feeding, amusing, and general care of the patient, a task which fully occupies her time. Placed in entirely new circumstances, depending mainly on one person for companionship and for the comforts of life, the patient has to throw off some of the selfish

habits which have been generated by the endless attention and devotion of her relations. If she quarrels with her nurse she has no one else to rely upon to execute her little wishes, to read to her, to write for her, and generally to lighten the burden of her life. This gives the medical man a powerful lever by which he can remove many objections which are raised against the carrying out of his orders as to food and other important matters. The patient is placed in bed and prohibited from making the many fruitless physical efforts which such persons are often urged to make in order to counteract their slowly increasing debility. This rest is of itself a relief. The diet for the first three days consists of gradually increasing quantities of milk. On the first day three ounces every three hours are given; on the second day five, on the third eight or ten, making in all from three to four pints in the twenty-four hours. About the third or fourth day massage is commenced, and is carried on at first for only twenty minutes twice a day. This period is soon lengthened to one hour, and then to an hour and a half. Three hours' rubbing is hard physical labour, and should be done by a "masseuse." In the case that was under my care at St. Thomas's one nurse did everything, and did it exceedingly well, but nevertheless I think it is more than one woman should be obliged to do. When the massage is about to commence the patient is placed in a blanket, without any other covering, so that each part of her body can be exposed and rubbed while the rest remains covered and warm. The operation consists of rubbing the skin and kneading the muscles of every part of the body, and it is facilitated by the use of some oil, such as neat's foot oil, as a lubricant. It is difficult to give any instructions as to the method which it is necessary to employ in rubbing these patients; but my belief is that the majority of intelligent people can carry it out successfully after one short lesson, if the object of it is explained to them, and they are told that the deep as well as the superficial structures should be kneaded. There is, in fact, no real difficulty, and certainly no mysterious rules have to be observed in massage. The idea that there is some mystery involved in the process is nevertheless prevalent, and tends to bias people against this method of treatment. By massage the circulation of the blood is accelerated, the muscles are artificially exercised

the excretory organs are roused into activity, and the whole of the vital processes go on with a rapidity and energy to which they have long been unaccustomed. More food is consequently needed, and the call for it is often keenly felt; hence the increase in appetite and the extraordinary quantity of nourishment which is taken, usually without any signs of indigestion. Thus on the second day after the commencement of massage, the following was the dietary of one of my patients:

12.30 a.m.—Milk 8 oz.
3.30 a.m.—Milk 8 oz.
6 a.m.—A cup of black coffee.
7 a.m.—Milk 8 oz.
8.30 a.m.—Cocoa, bread and butter, two eggs.
10 a.m.—Milk 8 oz.
12 o'clock.—Milk 8 oz.
1.30 p.m.—Fowl, potatoes, greens, bread, rice pudding.
2.30 p.m.—Milk 8 oz.
5 p.m.—Milk 8 oz.
7 p.m.—Fried sole and bread.
9 p.m.—Milk 8 oz.
Midnight.—Milk 8 oz.

On the twelfth day of treatment, when massage was being done for an hour and a half twice a day, the following was the dietary of my other case:

6 a.m.—Black coffee.
8 a.m.—Milk 10 oz.
8.30 a.m.—Cream, brown bread, egg, coffee, bread and butter.
10 a.m.—Milk 10 oz.
11 a.m.—Soup.
Noon.—Milk 10 oz.
1.30 p.m.—Roast mutton, beans, potatoes, bread pudding.
2 p.m.—Milk 10 oz.
4 p.m.—Soup.
5.30 p.m.—Milk 10 oz.
7 p.m.—Fish, partridge, bread pudding, and fruit.
7.30 p.m.—Milk 10 oz.
During the night.—Milk 20 oz.

After about ten days from the commencement of treatment, muscular action and the vital processes generally are further stimulated by the use of electricity. An induced current of

moderate strength is applied to the muscles all over the body so as to cause their contraction. It does not much matter whether one pole remains fixed on some central part, while the other is applied to the various muscles in succession, or whether both poles are applied to the region where the muscles are being exercised. The masseuse is quite capable of applying the electric current in this way after she has had a lesson or two, and as this process occupies half an hour twice a day, the medical man may thus be saved a great deal of time and trouble.

Under this treatment, which has for its object the production of artificial exercise with its attendant increase in the activity of the vital functions, enormous quantities of food continue to be taken, the size of the muscles gradually increases, and fat is rapidly accumulated. After four or five weeks, earlier or later according to the discretion of the medical attendant, the patient gets up; and after six or eight weeks massage and electricity are gradually stopped and some more natural exercise substituted for them. The amount of food taken is also diminished, though the patient should retain a really good appetite. Finally, a month or more at the seaside or elsewhere completely restores the patient to health.

The question naturally arises, what are the cases to which this treatment is specially applicable?

Dr. Playfair calls his book on the subject, 'The Systematic Treatment of Nerve Prostration and Hysteria.' Here it seems to me that too great prominence is given to the nervous system. In the published cases prostration of the nervous system has not been more prominent than prostration of the muscular, glandular, and every other system. Nor are hysterical symptoms by any means universal, at any rate at the time when the cases come under treatment. The most striking feature of the great majority of cases which are thus treated successfully is atrophy; and although this is most evident in the muscles and superficial parts of the body, it is no doubt an equally real condition of the organs which are further removed from observation. If the patient is a youngish woman who, without presenting evidences of any known disease, is atrophied to the last degree, we may expect rapid and brilliant results. These cases often originate in some great mental, moral, or physical trial by

which the patients have lost their health, and during which they have been allowed to glide gradually into a weak and helpless condition. Once reduced to this state, their course is necessarily still further downwards, as their muscular system, owing to disuse, is often incapable of responding to the demands of the will, even if the nervous system be in a condition to originate such demands. It is then that this treatment steps in with almost certain success and does for the patient what the nervous system is incapable of doing—it exercises her muscles and stimulates the circulation, so that the glandular system becomes better able to deal with the larger quantities of food which are given. The effects produced are not confined to any one system, but reverberate through the whole body. The change may be roughly likened to that which occurs in an animal when the period of hibernation comes to a close. In each case life has been carried on at a minimum expense of food owing to the very small expenditure of force. But, though living on so low a level, both the atrophied patient and the hibernating animal are capable of being roused by altered conditions and invigorating influences to occupy those positions of activity from which they have been temporarily withdrawn. People who are not what is ordinarily called hysterical, and who have never presented the symptoms of hysteria, may, owing to some sudden depression of health, get into the condition described. But hysteria will always play a prominent part in the production of this atrophic condition. For, as far as we know, hysterical people are such as they are because they possess a nervous system which is what is called unstable, the harmonious action of the several parts being easily deranged and the equilibrium with difficulty restored. These patients are more easily influenced and depressed by those physical and mental conditions which are so frequently the starting-point of inactivity and consequent atrophy. But although hysteria must contribute a large contingent of such cases it will not have a monopoly of them. Nor must we be misled by the application of the term hysterical to them, and suppose that the treatment originated by Weir-Mitchell is applicable to all, or even to a large number of cases of hysteria. Some persons are subjected to this treatment simply because they are hysterical and not because they are atrophic. The want of success which then

results throws an unmerited slur on the treatment, which, while intelligible and rational when applied to the latter class of patients, is not so when applied to the former. The cases to choose are those in which the patient for some cause or another, often a merely temporary one, has been reduced to a condition of inactivity, has been perhaps bedridden for many years, and who is not at the time suffering from any serious disease which could explain her condition. By the "Weir-Mitchell" plan of treatment such patients can be supplied with muscles, the absence of which would make their recovery if not impossible, at least very tedious; and the process by which their muscles are restored to them involves such changes in the condition of their nervous, glandular, and other systems, that they too recover their normal functions.

We do not assert that no cases corresponding with the description we have given get well unless treated by the "Weir-Mitchell" method; but only that the latter affords an intelligible and singularly successful plan of treatment.

Those medical men who still scoff at it do so either because they have never witnessed it, or because they have tried it in ill-chosen and unsuitable cases, or, finally, because they are so accustomed to associate "miraculous cures" of hysterical patients with quackery that they are no longer capable of forming a fair judgment of any treatment, however rational, professing to deal with a set of cases which have been branded with the name "hysteria."

COMMON CATARRH, SEWER AIR, AND SORETHROAT.

By ALFRED CARPENTER, M.D.

There are many difficulties in determining the causation of epidemic diseases. That which is impossible to effect in a great city with its thousand and one influences may become possible in a suburb in which some causes may be entirely eliminated. By the principle of exclusion we may be able to draw deductions which, by repetition of result, may become all but certainty. It is true that personal experiences in disease are not always to be relied upon, but when it happens time after time that similar causes appear to produce similar results in the same individual there is a reasonable excuse for detailing those results and submitting them to the consideration of our professional brethren.

The history of the case about to be detailed gives a line of thought in connection with the causation of epidemic and infectious disease which is not new, for it has been suggested by myself many years ago. It has always appeared to me to be very difficult to prove the sequence of events with a certainty that should leave no loophole for error, and therefore I submit them for consideration with some diffidence. To the south and to the outer side of the writer's garden is a steep ascent, which is a public footpath, a high wall divides the path from the garden, which is to the north, and a row of cottages are on the south ; there is thus a channel between high walls

like to a spout; at the top the road turns sharply to the left at a right angle, and thirty feet from this angle is a grating which marks a ventilator for the public sewer. To the right of this ventilator there is a row of several houses, whilst the footpath is continued along the top of the hill towards the open country beyond but with villas right and left of it. The effect of this arrangement is that there is a quantity of sewage passing down the sewer at irregular intervals. From its position and the character of the neighbourhood it is certain that at times the sewer is comparatively dry, especially in the night, but 120 feet below it joins the main sewer which runs through the old town of Croydon, and in which there is always sewage. This main sewer is imperfect in its construction if we may judge by the offensive odours which occasionally emanate from the ventilator in question to which I especially refer. It is in the public footpath, and those who use the footpath have to walk over the grating and along a passage in which air from the drain may be retained for some time. The main sewer to which the branch descends receives the sewage from the workhouse infirmary, the sewage from this hospital does not go along the branch sewer but into a main 300 yards above the junction. This infirmary is the parish hospital and has more than 220 sick inmates, who, of course, produce all kinds of excreta.

I am particular in describing the surroundings of this sewer because it is to the ventilator in question, or rather to the emanations from it, that I wish to draw particular attention. The drain is flushed occasionally in a very imperfect manner by means of a hose attached to a fire-plug close by the ventilator. The flushing diminishes the effluvium which occasionally comes from the grating, and sometimes there is no smell to be perceived at the opening for several weeks together. At certain times, when there has been a fall of temperature with a fall in the barometer and a change of wind, but without rain, there is a very peculiar odour from this opening, it cannot be called a stink, but is a sweet, bad hay-like smell, such as I have occasionally perceived emanating from patients dying of a certain form of kidney disease; it proceeds directly from the ventilator; in the winter I have seen a vapour rise from this opening in a gentle steamy form, and when this vapour

has been collected upon microscopic slides smeared with glycerine it has showed under high power (together with other spores) very minute organisms with a high refracting quality, similar to the micrococci of Hallier and Cohn, forming short chains and colonies taking the form of zooglea. The endeavours to collect the micrococci always had a similar result upon myself and led me to name them Cacozymes. This result happened so often from exposure to the influence of this odour that I am quite positive as to cause and effect. I take the opportunity of bringing it to the notice of searchers after causation of disease in hopes that those who are cultivating the micro-organisms connected with disease production, will be able sooner or later to identify the different classes of disease producers and clearly make out their distinctive characteristics.

The ventilator in question came under my personal notice about seven years since. Observing the smoke-like ascent from the opening, I let down into the cavity below the bars of the grating some microscopical slides smeared with glycerine, and in doing so was exposed to the fumes from the grating for nearly a quarter of an hour. The temperature of the air at the time was about freezing-point, the wind, though scarcely noticeable, was south but dry. The temperature in the sewer one foot below the level of the ground was 46° F. Twelve hours after this exposure I had a relaxed feeling in the throat with a frequent desire to swallow, which action was on the following day slightly painful. Inspection showed the uvula somewhat relaxed and the mucus membrane of the pharynx slightly congested. The nasal passages became dry and the conjunctiva slightly reddened. Thirty-six hours afterwards there was a free flow of acrid water from the nose, a general feeling of malaise, and a slight hoarseness, and in forty-eight hours a discharge of mucus from throat, slight laryngeal cough, and the usual conditions of catarrh. The symptoms followed a common course. There was a slight bronchial irritation, no loss of appetite, and gradual disappearance of the relaxation of throat and increased discharge of mucus, and restoration to healthy feeling in about five days. Every attempt to obtain microscopic evidence from this ventilator was always attended by a similar set of symptoms when

that particular smell was present, the powers belonging to my microscope not being high enough to properly resolve the micrococci, and my spare time being given to the duties of an office to which I had then been recently appointed, led me to give up microscopical research; but it happened on several occasions within the next two or three years that I recognised the odour from that particular ventilator and always with the same result, viz. the catarrhal action on the uvula and nose, so that I determined to designedly test its effect, watch for the effluvium, and note its results. This has now happened on six several occasions. There have been times when an offensive odour has come from the ventilator which has been decidedly sewer-like, but it has not produced the relaxed throat. The odour which has been followed by the relaxation has been very slightly nauseous, and allied to that which is found in patients who are suffering from kidney disease and also in the last stages of diabetes, and was not associated with that which belong to the sulphuretted hydrogen compound. The action of the micro-organisms was limited to an influence upon the mucous membrane of the respiratory tract, and in my case was only twice attended by general but slight rise of temperature, which continued for twenty-four hours. There was no rigor or other constitutional symptoms, the signs appeared to be those of a local and limited action upon mucous membrane. It is certain that one attack did not lead to any immunity from subsequent attacks, and that the effects do not belong to the class of the scarlatina or rubeola type, and yet they were allied to both. Whenever I was affected, so-called colds abounded in my immediate neighbourhood, especially the class accompanied by bronchitis, pneumonia, and quinsy. It appeared to me as if some micro-organism came in contact with the pharyngeal and nasal mucous membrane, and finding a suitable pabulum was sometimes able to develop into a something capable of continuing the species and at the same time producing more or less constitutional disturbance in some people, but it did not always do so in my case. I assume that the extent of this disturbance would be in accord with the amount of pabulum existing in the tissues of the host. That the disturbance would be local and limited to a local effect, if the host was not carrying about with him an extra

quantity of pabulum for the micro-organisms to increase and multiply in. But if able to effect a lodging there, the blood becomes their home and constitutional disease arises. Sometimes, as far as my experience extends, there has been an immunity from catarrh and similar disorders in my own neighbourhood, but then no sewer smell. At other times the smell from the ventilator has been ammoniacal rather than catarrhal, and then it has appeared to me that there has been a greater tendency to abdominal disturbances than to respiratory maladies. I have stated that the observations I have made have been suggestive only, but in this district there has been no kind of soil contamination for the past thirty years except within narrow limits. The whole of the sewage of the district is carried away within a few hours of its discharge and placed in a condition in which it cannot set up any kind of action associated with parasitic disease, for it is at once utilised in the production of vegetable growth; but a few of the old sewers are imperfect, and on those sewers the ventilators are occasionally sources of discomfort, and it may be of danger, though to a very small degree compared with the time when the sewer gases and vapours produced by decomposition and the eruption of hot water into the drains were discharged into the houses themselves, as was the case here thirty years ago. It is at present impossible to say how many people may have been affected by the ventilators to which I refer, a slight change of wind would prevent it being wafted down the spout and thus save the passengers from its effects.

I am of opinion that parasites of this class do not increase and multiply in healthy frames, that if the blood-current is properly pure and the mucous tissue in the throat and nasal passages properly formed and has its natural constitution, the micro-organism would fail to establish itself. Hence it happens that A, B, and C inhaling the effluvium from the sewer in question are not affected by it, whilst D is influenced as I have repeatedly been. E gets tonsillitis. F has bronchitis, whilst G has a form of pneumonia which is sometimes styled typhoid or infectious pneumonia.

A, B, and C are in a state of health which does not allow the parasite to colonise in their mucous membrane, whilst D, E, and F have a state of constitution which allows the micro-

organisms to obtain a hold but not always to reproduce their kind. When the latter effect results there is a high temperature and constitutional disturbances are set up and the patient becomes infective.

I have formed these opinions from continued observation upon myself as well as upon others who have had catarrh, and who must necessarily have been exposed to the same influences as myself. On one occasion when I was slightly feverish, I found micro-organisms in the discharge from the pharynx similar to those which I had detected upon the glycerine slides. I am bound to say that it was difficult to get throat secretion entirely free from somewhat similar cacozymes, but I did not find them there when there were no sewer smells to be perceived. The sewer smells in this district are of several kinds. There is the ordinary sewer smell indicative of decomposing sewage and attended by sulphur compounds. There are those attended by ammonia compounds, and there is a combination of these constituting sulphide of ammonium. I do not associate the catarrhal attacks to which I refer with either of these, though they may be associated in consequence of a combination with another state. The smell is a distinctive sweetish smell approaching to that which is perceived after a hayrick has been on the verge of spontaneous combustion, but in which the combustion has not been completed. I have reason for associating it with the discharge of large quantities of hot water down the main sewer of the old town when there has been a fall of temperature out of doors and the wind has changed to the south, by which a current has been produced so as to influence the opening in question. I have found the same opening an inlet for fresh air on some occasions, and at such times there has been, as far as my experience goes, a complete immunity in this district from catarrhal attacks. The arrangements by which the smell from the sewer is retained in the spout-like ascent to the ventilator is calculated to cause the effluvium to affect a considerable number of people, but as the passers-by come from all parts of the parish to go on to the public recreation ground, which is on the other side of the hill, there is no possibility of obtaining any evidence upon this point. The action from this ventilator is very limited. I have reason for associating its particular

effects with the sewage from the hospital which passes in the main below, but this is a surmise and I cannot say that it is based upon fact, and at the present time is suggestive merely. I have never found the smell in question when the place has been free from catarrh, and catarrh has always abounded among the people when there has been distinct emanations from the opening. I think also that the longer continued the gaseous discharges have been, the more general have been catarrhal and pulmonary complaints in this district.

A FEW CASES OF BROKEN JAW.

By CHARLES E. TRUMAN,
ASSISTANT DENTAL SURGEON.

In most books where the subject of broken jaws is treated no mention is made of injury to the teeth. I think that under this head it is quite legitimate to speak of broken and dislodged teeth.

The fracture of one or more of the *front* teeth is a common accident, and it is important to know what to do in each case If a small piece only of the tooth is broken off it can be smoothed and rounded, so that food will not lodge, thus lessening the liability to decay, and also making the injury less conspicuous. The piece broken off can be reproduced in gold or cement stopping, or a piece of porcelain can be fixed on with gold or any other stopping. If a large portion of the crown is broken off, the question to be decided is, whether it is better for the patient to have the remaining portion of the tooth extracted, so that the adjoining teeth may come together, or whether the fang should be left, that a porcelain crown may be attached to it.

The three things to be considered are the age, sex, and station of the patient.

If the patient is under fifteen years of age, the fang will not be sufficiently developed to hold a pivot, and if the accident has happened to the mouth of a girl it is more important to consider appearances, as a boy can cultivate a moustache, which will hide the loss of a tooth. Poor people, as a rule, would

rather have the tooth out than incur the trouble and expense of a pivot. When the crown is much broken, the pulp is nearly always exposed, giving great pain. If the tooth is not to be extracted the pulp must be destroyed. It has been proposed to do this by sharply driving a piece of soft pointed wood up the canal, but this does not seem to me a good plan. Nitric acid acts very well; the stronger the better. If nitric acid is applied to the pulp on a piece of wood or on a fine metal bristle the part touched is killed at once, and the whole pulp will be destroyed without pain after two or three applications. Care, however, must be taken that no nitric acid shall get upon the gums. This is prevented by protecting the mouth with a napkin wrapped round the broken and adjoining teeth.

The front teeth are often knocked out of the jaw at football, cricket, &c. Each tooth should be cleansed at once by washing it, if possible, in warm water. When the bleeding of the socket has stopped the socket also should be washed out to free it from dirt and clotted blood, and the tooth pressed into its place. In most cases the tooth will hold in perfectly well without any support, but if it is found to be necessary, a small vulcanite or gutta-percha plate can be made, capping the teeth on either side, as well as the loose one, or a small strip of rubber dam with holes made in it at each end can be used. The teeth on either side are put through these holes, and a piece of well-waxed silk is tied round the necks of the teeth, the intervening portion of rubber being stretched over the injured tooth. Or again, a small splint may be made by using one of the cement stoppings, and plastering this over the teeth when about the consistency of cream, keeping it dry until it has set, and then trimming it up.

In all cases of broken jaw, care must be taken that a tooth has not slipped in between the ends of the broken bone, which would delay or prevent union. Displaced teeth should be put back into position, even if they have been quite knocked out of their sockets, as in most cases they unite firmly and do well.

Case 1.—R. A. H—, æt. 20, came on the 4th of January, 1882, complaining of great pain over the left side of his face and jaws. Ten days previously he had gone to a chemist to have the first left upper molar extracted. The key was the

instrument used for this purpose. The operator, finding that more than the first molar was moving, desisted, and plugged the tooth with amalgam. On examining the patient's mouth, I found the portion of the alveolus containing the first and second molars and wisdom tooth on the left side of the upper jaw, displaced downwards and outwards, and these, coming in contact with the molars of the lower jaw, made it impossible for the man to close his mouth. As the first molar was very loose, and the pain seemed to be caused by the metal stopping pressing on its exposed pulp, the tooth was carefully extracted. The pain was now relieved, but the displacement of the second molar and wisdom tooth still prevented the closing of the mouth. As these could not be pressed into place, I took an impression of the mouth, rectified the plaster model, and made a vulcanite splint fitting this model in the usual way. This would not go into its place, but as I knew that the splint was correct, it was tied in with silk, so that by the lower teeth biting on the vulcanite, the splint would be gradually pushed up into place, and the portion of alveolus and teeth would be thus forced into their right position.

The next time I saw the patient, after an interval of a week, the splint was in place; he could eat quite well with it, was free from pain, and his general health was much improved. His health had suffered from the fact that he had not been able to eat for ten days.

At the end of the third week the splint was taken off; I found the alveolus united, and the teeth in their normal position, but as they were still loose he wore the splint for one more week, at the end of which time he went away cured.

Case 2.—This was the case of a boy, æt. 10, who had been knocked down by a runaway horse a fortnight before I first saw him. His head was injured at the same time; this was attended to at the hospital in the country.

On examination I found the alveolus containing the four upper incisors driven inwards. The gums round the necks of the teeth had been injured, making the teeth now look too long. The alveolus and teeth were fixed in their abnormal position, and could not be pushed into place. I took an impression of the mouth, and made a vulcanite splint to fit this model just as

it was, with the teeth and alveolus in the wrong position. The front part of this splint was pierced with holes, and these holes were countersunk on the lingual surface. The inside was now lined with a thin layer of gutta percha, which was forced through the holes, thus holding it to the vulcanite. By this means the front part of the splint was made more prominent, so that when it was put into the mouth the gutta-percha pad pressed upon the displaced portion of the jaw. This was tied in with silk, and as the boy bit on the back part of the vulcanite which capped the upper molars, he gradually pushed out the alveolus containing the incisors. By increasing the thickness of the gutta-percha pad from time to time, the broken portion of the jaw was gradually forced into place.

Case 3.—Rev. J. H. C—, æt. 32, and six feet two inches in height. When he was fourteen years old he fell down, cutting his face. He was taken to the village chemist, who strapped up his face, but did nothing more. There can be no doubt, from the state of his lower jaw now, that it was broken by the fall. At the present time, the teeth meet *only* at the back of the mouth; the wisdom teeth entirely, and the posterior halves of the second molars on either side. On the left side of the lower jaw there is a deep dip, the apex of which corresponds to the second bicuspid; the interval at this spot between the grinding surfaces of the upper and lower teeth is $\frac{9}{10}$ths of an inch. At the front of the mouth the interval between the cutting edges of the upper and lower central incisors is $\frac{3}{8}$ths of an inch. The consequence of this inability to close the mouth is that he cannot masticate his food, and is therefore a martyr to indigestion. At the bottom of the dip the crown of the second bicuspid can just be seen above the gum. The falling of this tooth down between the broken ends of the bone was most likely the cause of the great deformity. The patient says he was fourteen years old when the accident happened, and as the second bicuspid is cut at about the eleventh year, we may conclude that it was then erupted. He has suffered very much from neuralgia, and I think this may fairly be ascribed to the second bicuspid, whose fang must be pressing on the inferior dental nerve. He will not have this tooth extracted, nor will he have anything done to improve his power of mastication.

Case 4.—William Francis H—, æt. 38, a coal porter at the Vauxhall gasworks, was admitted into Albert Ward under Mr. Sydney Jones, on Thursday, March 27th, 1884. He said that whilst wheeling a barrow, he fell on to his face on a concrete floor from a height of twenty-five feet. I saw him the next day, Friday, March 28th. The whole of his face was very much swollen and bruised, and the lower lip was cut at the centre. It was therefore difficult to make out what injuries the jaws had received. The lower jaw was broken between the two central incisors, and a V-shaped piece of bone containing the left central and lateral incisors was wanting. The upper jaw was fractured vertically between the two central incisors, and also horizontally, but all the bones of the face were more or less broken, as on pressing upon the upper centrals movement could be seen at the lower rim of the orbit, and at the seat of junction of the nasal bones with the frontal. The hard palate was perforated a little to the right of the median line.

I took an impression of the mouth, but found great difficulty, as the swelling of the face and lips made the aperture of the mouth so small, and also on account of the great mobility of the bones of the face. An ordinary modelling tray could not be got into his mouth. I therefore divided a tray down the middle of the handle, and took an impression of each side of the mouth separately. The grinding surfaces of the back molars of the upper and lower jaws could not be separated however widely the patient opened his mouth, so the sister kindly held the portion of the jaw opposed to the one I was modelling out of the way with a tongue spatula, and I also used the surface of this spatula as a guide to slip the back of my tray along. After several attempts, I managed to get an impression of each jaw in two halves.

To the models obtained from these impressions when cast in plaster and rectified, a separate vulcanite splint for each jaw was made, with the upper surface of the lower one and the lower surface of the upper one flat where the two splints would come in contact. These splints were put into the patient's mouth on the following Monday, and at first had nothing to hold them in position. After two or three days, a four-tailed bandage was put on. At the end of a week I tied both splints in with silk, by passing the silk round a tooth on each side of

the jaw, tying this, and then threading the ends through holes drilled in the vulcanite.

By the 22nd of April (*i.e.* at the end of the third week from the time the splints were first put on) the upper jaw was united, but the central incisor of the right side was a little longer than the other one. This I made right by rounding off its corner. The upper splint was not put on again. The lower jaw was still ununited on account of the piece of lost bone. My own splint was put on, without any arms or anything but the accurate fit of the gutta percha to fix it. It held the portions of the jaw together quite firmly, and he said he could eat well with it. A fortnight after it was put on I had to cut off some of the gutta percha as it made his mouth sore. Later on I told the patient to take the splint in and out himself, and to use it at meals, as he said he could not eat without it, and in this way by degrees he has left it off altogether.

The two splints that are the most universally adapted to all cases of fractured lower jaw are Hammond's and Kingsley's.

Hammond's is the continuous strong iron wire passing from the labial sides of the teeth backwards around the last molars, and thence to the lingual surfaces, this being held firmly in place by much thinner wire passing round the splint, and round each individual tooth. This splint is very difficult to apply, and unless all the details are strictly attended to it is not effectual.

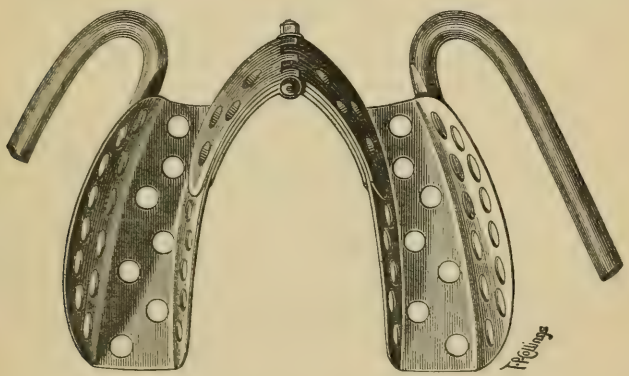
Kingsley's, which is really a modification of Hayward's, is a vulcanite splint fitting the teeth, and held in place by two arms attached to the vulcanite, and passing out of the mouth at the angles of the lips. These arms are held firm by a bandage passing round them and under the chin.

Both these methods involve the making of an entirely new splint for each case. My endeavour has been to make a splint that can be applied at once to any case.

A semicircular trough is made of sheet metal (I prefer steel), so as loosely to fit a medium-sized jaw. The front of this trough is cut away until the lingual surface only is left. At the centre of the lingual surface there is a hinge, so that the splint may be opened and shut to make it fit a jaw of any size. The pin of this hinge will take in and out, and will also fix the hinge in various positions. The body of the splint is pierced

all over with holes, and has attached to it arms which can be taken off. If the pin of the hinge is taken out the splint will be in two pieces, and can be put together again so that either side is at a higher level than the other.

To use the splint make it resemble as much as possible the shape and size of the broken jaw to be treated; line the inside of the metal with softened gutta percha; put this into the mouth with the gutta percha on the tops of the teeth; press the trough down until the teeth and gums are embedded in the gutta percha. Then take the whole thing carefully out of the mouth, and place it in cold water to harden. As soon as it is hard, take the gutta percha out of the metal. Now you can see the impressions of the teeth, and their irregularities caused by the fracture of the jaw. All these irregularities must be



removed by cutting the gutta percha through at the lines of fracture, and reuniting the pieces thus produced, so as to make the impression in the gutta percha what it would have been had it been pressed upon the jaw before the jaw was broken. Now make the metal splint as nearly as possible the shape the jaw should be, and insert the gutta percha representing the impression of the normal jaw inside it again; cover the whole of the outside of the metal with a sheet of gutta percha. When cold, trim it up with a hot knife, and polish it with soap. Cut holes in the gutta percha at the seat of each fracture, so that the tops of the teeth can be seen, in order to be sure that the portions of the jaw are in their right position.

This splint can also be used by pressing the gutta percha when soft upon a plaster-of-Paris model which has been made like the jaw was before it was fractured instead of pressing it upon the jaw itself.

The arms are to hold the splint in place for the first few days, but it will be found that they are not as a rule necessary; the gutta-percha lining of the splint fits the teeth and jaws so accurately, and also shrinks a little on hardening, so that the portions of the jaw are held quite firmly without the use of the arms.

The top of the metal covered with the gutta percha is quite hard enough for the patient to masticate his food. The splint can be taken out from time to time, thoroughly cleansed and replaced, and, if it is thought good, the gutta percha can be stripped off and new substituted. The metal portion of the splint of course can be used over and over again.

CASE OF GASTRO-COLIC FISTULA.

By WALTER EDMUNDS, M.C., F.R.C.S.

The patient whose case is here recorded, was sent up from the country with the following letter:

"John I—, æt. 49, master fellmonger and leather dresser, sallow complexion, has suffered from attacks of liver disorder or indigestion for years. Has had, at intervals, attacks of inflammation in the veins of the leg and thigh, sometimes on one side, sometimes on the other, ever since he was twenty. Always temperate. Has been under my care since January, 1883. He then had an attack of colicky pains in the bowels with sickness, but was quickly relieved by opium and castor oil.

"In July, 1883, I saw him again and he complained that he had been having 'bilious attacks' every fortnight, that he had pains in the bowels every day, with some spurious diarrhœa, never having a solid motion; he felt full after food; was getting thinner. At that time there was hardness and tenderness all across the epigastric region and below the left ribs and epigastric pulsation; enlarged veins over the lower right ribs and in the left groin (he said he had had these veins enlarged for years).

"In August, 1883, he had obstruction of the bowels for three or four days, relieved by castor-oil enema. He then

went to Buxton, and returned in September with phlebitis of the right femoral vein, the vein being hard, swollen, painful, and the whole leg and thigh swollen. He recovered from this in about a month, but suffered nearly continuously with indigestion till February 15th, 1884, when, after eating a hearty meal of pig's face and enjoying the gristly part of the snout, he had another attack of intestinal obstruction. Stercoraceous vomiting soon set in with 'tormina,' and the obstruction was complete for twenty-one days (with the exception of the occasional passage of a little 'flatus'). The obstruction yielded to the hypodermic injection of morphia, aperients and enemata (the long tube would only pass seven inches) producing no effect. Belladonna produced no effect but delirium. Galvanism no effect. The motions have never been solid, never blood in them. Since then his bowels have opened regularly, but never solid motions. He went to Weston-super-Mare in April, but the vomiting returned a month ago, and, though his bowels have acted regularly, he vomits every twenty-four hours from one to two quarts of frothy, gruel-like liquid, having a fæcal odour and neutral reaction, containing no sarcinæ, but swarming with bacteria. By Dr. Wade's advice he washed out his stomach daily for five days, but, though he used three quarts of salt and water, the fluid came back no clearer at the end of the washing than it did at the beginning. Creasote and salicylate of soda have produced no good effect."—G. Birt, M.B. Lond.

State on admission into St. Thomas's Home, May 29th, 1884.—His chief symptom was vomiting. About once a day, after having pain for three or four hours in the region of the stomach, he would vomit from one to two quarts of a brown liquid containing lumps of undigested food. This vomit had a most repulsive odour, as of fæces; after the vomiting he felt pretty well again and could take and retain food. He passed only a very small amount of fæces per anum, but his stools seemed otherwise normal. No tumour or tenderness could be detected in the abdomen. The urine did not contain either albumen or sugar, but there was a considerable amount of bile and also a very large quantity of indican.

On June 5th the patient was seen in consultation by Dr. Bristowe, who considered it a case of gastro-intestinal and,

most probably, gastro-colic fistula, and he mentioned a very similar case which had been under his care in the hospital.

On June 9th Sir William McCormac saw the patient. He too considered that there was a fistula between the stomach and colon, but he also detected per anum a hard mass about two inches up the bowel; this tumour, however, caused no symptoms. A colotomy on the right side was recommended, with the view of intercepting the contents of the colon before they arrived at the fistula. The patient was losing weight rapidly, having become five pounds lighter in the ten days he had been in the hospital.

On the 12th of June Sir William performed the first part of the colotomy, bringing down and suturing the gut, but it was not opened till the 16th. After the operation the vomiting ceased for a day or two, probably from the small amount of nourishment the patient could take. But a new symptom appeared, the passage of dark diarrhœa stools containing blood. This continued, notwithstanding treatment by morphia and opium enemata, and greatly reduced the patient's strength.

Vomiting of a small amount of feculent smelling liquid only occurred once or twice after the first part of the operation.

The actual opening of the colon was made on the 16th, but this led to no improvemont in his condition, indeed, very little except flatus escaped through the wound.

The patient gradually became weaker and died on June 19th.

Post-mortem examination.—On opening the abdomen the stomach was found united to the transverse colon by a hard cancerous mass, through which a large opening an inch in diameter passed from one organ to the other. The colon was puckered up at this spot and partly obstructed. The cancer seemed to have started in the colon, for the stomach was elsewhere normal. The post-peritoneal glands were enlarged.

At the lower part of the rectum, about two inches above the anus, there was a large ulcer with raised margins. Microscopically, this ulcer was found to be a columnar-celled carcinoma. The growth between stomach and colon was not examined for fear of spoiling it as a museum specimen. No peritonitis; no disease elsewhere.

Remarks.—Gastro-colic fistula may arise from an ulcer,

simple or malignant, of the stomach, an ulcer of the colon, or from an abscess external to both stomach and colon but opening into both.

Dr. Murchison considered that out of 33 cases he collected,[1] 28 originated in the stomach, three in the colon, and two in abscess.

In the present case the disease probably started in the colon, because (1) the early symptoms (obstruction) had reference solely to the colon; (2) at the autopsy a contraction of the colon was found; and (3) there was no disease of the stomach except at the seat of the fistula.

In an interesting case published by Dr. Bristowe[2], in which an abscess in the splenic region led finally to gastro-colic fistula, it is most probable that the disease started in the colon, because the passage of some blood per anum was an early symptom and because ulceration round the whole circumference of the bowel was found post mortem, while the stomach was healthy except at the seat of the fistula.

The disease probably originated in cancer of the colon in Dr. Lediard's case.[3]

With respect to the symptoms of the present case, it might be thought that the plugging of the veins was independent of the disease of the intestines, but œdema of one leg is described in a case of gastro-colic fistula recorded by Gere.[4] The intestinal obstruction was in all probability due to cancer of the colon. Lastly, the absence of symptoms in connection with the cancer in the lower part of the rectum was due to the diversion of the greater part of the fæces into the stomach. Nature had in fact performed colotomy.

With respect to treatment in those cases in which there is an abscess, the latter may possibly be diagnosed from the presence of a tumour with or without fever, sweatings, and rigors, and from the result of an exploratory puncture. The abscess may discharge by the colon, but it may not then fill up and heal. There is an interesting case by Fletcher[5], in

[1] 'Edinburgh Medical Journal,' 1857.
[2] 'Lancet,' 1883, vol. ii, p. 531.
[3] 'Med. Times and Gazette,' 1876, vol. ii, p. 652.
[4] 'New York Med. Record,' 1876, p. 339.
[5] 'Prov. Med. and Surg. Journal,' 1845.

which an abscess in the left lumbar region followed a severe injury. The patient had intestinal obstruction which at last yielded after the passage of pus and blood. Subsequent attacks of constipation occurred, and the patient finally died with a large abscess cavity communicating freely with both stomach and colon.

If an abscess is detected the best course is probably to lay it open, especially if its walls are adherent to the abdominal parietes.

For the relief of the disgusting symptoms of fæcal vomiting the only thing that can be done is to endeavour to divert the fæces by making an opening into the ascending colon. Fæcal vomiting, however, does not occur, Murchison[1] states, in those cases where there is much obstruction to the pylorus by cancer, for then the food does not pass into the small intestine and no fæces are formed. In a case recorded by Mr. Jones, of Carnarvon,[2] it was noted that the small intestines were very contracted and only three feet in length.

[1] 'Lancet,' 1864, vol. i, p. 242.

[2] 'Med.-Chir. Trans.,' 1852.

CASES OF TUBERCULAR MENINGITIS.

By JOHN S. BRISTOWE.

I am induced to publish the present series of cases of tubercular meningitis, not simply because they are cases of that common though always interesting disease, but for the reason that all of them either present particular features of interest or are specially instructive.

1. In the first three cases the meningeal affection was obviously secondary, as it almost always is, to tubercular disease of the thoracic or abdominal organs. But the interesting point in relation to this association here is that either the primary tubercular disease had apparently become retrogressive if not cured, or that at any rate its symptoms had subsided, and from a clinical point of view a cure had been effected.

The first case was that of a man who had had an attack of what was regarded by his doctor as congestion of one of his lungs, and from which he had recovered in the course of a few weeks. This "congestion of the lungs" was no doubt pleurisy, and, with the subsidence of inflammation and absorption of effusion, appeared to have been cured. The tubercular character of the disease was not, and I suppose could not have been, recognised at the time. That it was tubercular, however, there is no doubt; and that it was associated with a tendency to

general tuberculosis was shown by the discovery at the autopsy of small tubercular ulcers in the bowel, and of tubercles in the kidneys as well as in the membranes of the brain. The case affords an interesting instance of how tuberculosis of serous membranes becomes apparently, though I fear for the most part only temporarily, cured by the subsidence of the inflammation and effusion which are the main local clinical evidences of its presence.

The second case affords an even more interesting example of the same thing. In this instance the patient, some three months before his death, suffered from pleurisy with effusion on the right side of the chest. He was tapped and apparently got well. A couple of months later he had a recurrence of the same conditions on the left side, and again recovered after paracentesis. There was reason, no doubt, in this case, from the persistence of high temperature, and the repetition of the same kind of disease without definite cause, to suspect the presence of tubercles. But their existence was not proved, and no definite opinion on the matter was arrived at. After the death, however, of the patient from tubercular meningitis, it was discovered that there were miliary tubercles in the lungs, that the right pleura was obliterated by adhesions which were studded with tubercles, and that the left pleura was still the seat of pleurisy with effusion. It is not stated whether there were tubercles in connection with the latter cavity.

In the third case there was no history pointing to tubercular disease. The patient had been suffering from sciatica for some time, but was in other respects apparently well at the time when he first manifested symptoms of meningitis. At the post-mortem examination, however, it was shown conclusively that, although no recent tubercles were discovered, there had been tubercular mischief at the apex of the left lung and in the ileum.

2. The next three cases (Cases 4, 5, and 6) I group together mainly because they seem to me to bear on the question of the slow growth of tubercles in the membranes of the brain, and the development of definite symptoms only when either inflammation becomes superadded, or the growth becomes so abundant as to involve the surface of the brain itself or the cerebral nerves.

Case 4 was that of a boy eight years of age, who seems to have been in good health up to three months or so before his death, when he had an attack of rheumatic fever. From this time he complained of headache. Yet he went to school and about a month before his death passed an examination. About a week later he began to suffer from sickness as well as from headache and his sight is said at times to have been defective. At the time of his admission, five days before his death, he was complaining of headache, but was quite sensible. He soon became drowsy and died comatose. The morbid anatomy of this case was extremely interesting. There was general tuberculosis; and in the membranes of the brain tuberculosis was extensive and advanced. The only tubercles discoverable at the base were a few about the flocculi, but the fissures of Sylvius and the velum interpositum were thickly studded with them. The chief accumulation of tubercles was in a most unusual situation, namely on the convexity and opposed surfaces of the cerebral hemispheres, near the longitudinal sulcus. Here they had run together and formed thick irregular laminæ beneath the arachnoid, with thick lamellar prolongations here and there to the bottom of the sulci. The tubercles here were far too copious and too much advanced to have been developed during the few weeks in which the child showed fairly definite signs of cerebral disease. Their presence no doubt had something to do with causing the headache from which he began to suffer three months before his death, but which did not prevent him from undergoing a successful examination two months later. It is noteworthy that there was scarcely any indication of inflammation, and especially little at the base of the brain. It was doubtless owing to the comparative freedom of the latter part from disease that there was no local paralysis. The coma which came on gradually before death I am disposed to attribute to distension of the ventricles with serum.

In Case 5 failure of memory had been observed for four or five weeks before the day on which the patient's illness was said to have commenced. This was nineteen days before death; and the course of his illness was fairly characteristic. In this case much inflammatory lymph was found upon the surface of the brain, and many of the symptoms were doubtless largely due to meningeal inflammation. But the tubercles at the

base of the brain were extremely abundant and had coalesced into plates; and there can be no doubt that their earliest appearance was long antecedent, not only to the occurrence of the first definite symptoms of disease, but even to the failing memory, for which they were probably answerable.

Case 6 is especially interesting in this respect. The patient was a general servant. She first complained of headache, drowsiness, &c., on the 9th April, but she continued at work, in spite of her complaints, until the 21st. On that day she began to ramble, two days later she came into the hospital with marked cerebral symptoms, and she died in the course of three days, namely, on the 26th. The post-mortem record has been mislaid; but the post-mortem at which I assisted made a vivid impression upon me, for in comparing the course of the patient's illness with the appearances found after death, I was struck with the abundance of the tubercular deposit and its encroachment at the bottom of the sulci on the grey matter of the brain, and the impossibility that it should have commenced with the commencement of the patient's symptoms. The amount of disease was unusually large, the duration of the case was unusually short.

3. It is curious that in the majority of cases of tubercle of the brain, either the patient has embedded tumours alone, or he has miliary tuberculosis of the membranes alone. A patient with embedded tumours, however, is always liable to the supervention of tubercular meningitis. One of the most interesting examples of that fact is furnished by a case the full particulars of which I refrain from publishing on the present occasion. It was that of a boy who when nine years of age had two epileptiform seizures which were followed by progressive evidences of cerebellar tumour, who came under my care two years later with recently developed tubercular meningitis of which he died in the course of two or three weeks, and at whose autopsy two largish tumours were found in the cerebellum, besides recent inflammation of the membranes and the pretty abundant presence in these of miliary tubercles.

Cases 7 and 8 are examples of the same kind of association. Case 7 was a boy of 14. He had had for twelve months vague symptoms pointing to cerebral disease, and for several months had suffered from subcutaneous abscesses arising without obvious

cause in various parts of the body. On admission on the 12th May, he was quite sensible, but was complaining of agonising pain in the head, coming on in paroxysms and making him cry out; he presented optic neuritis of some duration, his eyesight was impaired, but he had no paralytic symptoms. He had some abscesses about his body. The pain in his head continued extreme and was only relieved by morphia injections. There were slight indications of local paralysis about the face a few days before his death, which, preceded by coma, occurred six days after admission.

At the post-mortem examination a good many small tubercular tumours were found embedded in the substance of the cerebrum and cerebellum. There were also miliary tubercles in the membranes at the base, especially in the fissures of Sylvius, but no definite signs of meningeal inflammation. Indeed, I am inclined to think that although some of the symptoms which he exhibited during the last day or two of life were probably due to the meningeal complication, the chief symptoms, and those which were instrumental in causing death (such as his intense headache and his coma), were attributable to the tumours. The abscesses which arose from time to time during the last few months of his life were a puzzle to us. At one time it was thought they might be pyæmic, especially as there was a history of ear disease. But no active ear disease was found and their cause remains a mystery.

Case 8 is that of a girl two years old, who had been irritable and drowsy for a few months, but whose actual illness was supposed to have begun on the 1st July, when diarrhœa, vomiting, irritability, and drowsiness came on. She was admitted on the 6th, and was then, and continued, drowsy and irritable, with low temperature and slow, somewhat irregular, pulse. But she had no paralysis, no fits, and there was no optic neuritis. On the 17th the pulse became rapid, the temperature rose, and the drowsiness increased. On the 18th the temperature, having fallen to 96° in the morning, continued to rise during the remainder of the day; and shortly before her death, which occurred early on the morning of the 19th, it reached 109.° The head only was examined. Three moderate-sized tumours were found in different parts of the brain, and the lateral ventricles were distended with fluid. There was no

congestion of the surface of the brain and no lymph; but in the fissures of Sylvius there were numerous miliary tubercles. It is doubtful whether the child had really tubercular meningitis. If it had, both that and the symptoms due to it were slight and comparatively unimportant. I am inclined to believe that the symptoms are fully accounted for by the tumours, and the dropsy of the ventricles, and that the meningeal tuberculosis was at that early stage at which as a general rule there are no definite symptoms of its presence.

4. Case 9 is interesting mainly from the fact that there was tubercular meningitis attended with quite characteristic symptoms, while no trace of tubercular disease was discovered in any other part of the organism. The disease of the meninges was, so far as we could judge, primary.

I have added Case 10 to the list chiefly because it is an example of a kind of case which is not uncommon, wherein the symptoms presented by the patient have, at any rate for a time, a close resemblance to those of delirium tremens. The patient was a young healthy-looking fellow, who was said to have been somewhat fast, and to have had, during the previous two years, two or three similar but slighter attacks. The progress of the case soon cleared up all doubt as to its nature.

5. Before concluding the few remarks with which I venture to introduce my cases, I should like to refer to two or three points which they illustrate, but to which I have not alluded in the foregoing observations.

Distension of the lateral ventricles with serous fluid is one of the most common incidents of death from meningeal tubercle, and its presence is expressly noted in all of my cases, excepting 3, 7, and 10. It is difficult of course to say in any one case how much of the patient's condition as regards symptoms depends on such effusion, inasmuch as we know that the brain as well as other organs accommodates itself in a marvellous way to pressure slowly induced. There can be little doubt, however, that in many cases the accumulation causes drowsiness, coma, and more or less general even though slight paresis, and that these symptoms coming on towards the close of the disease are often mainly referable to this cause.

Optic neuritis is one of the most important indications of the presence of meningitis, as it is also of the presence of

tumours; and in tubercular meningitis it generally appears sooner or later. Among my own cases there are two or three in which the condition of the discs is not referred to, either because it was not investigated or because the note of the fact has been lost. Optic neuritis was present in Cases 1, 4, 7, 9; it was absent in Cases 2 and 8.

Paralysis of one or more of the cerebral nerves generally appears in the course of tubercular meningitis, and occasionally also more or less well-marked hemiplegia. In four of my cases no paralysis of any kind was observed from first to last. As regards two, this is not surprising, for one of them was the case in which the tubercle was almost wholly at the vertex, the base (with the exception of the fissures of Sylvius) being almost completely free from disease; and the other was a case in which also the affection of the base was limited to the presence of tubercles in the fissures of Sylvius. In one case the chief evidence of paralysis was that the patient saw double; towards the end his eyes diverged. In one, slight affection of one hypoglossal and of the motor muscles of one side of the face was suspected. In four the paralysis was limited to one of the third nerves, and was indicated by dilatation and immobility of the pupil, ptosis, and almost complete immobility of the eyeball. No other varieties of paralysis were observed.

Convulsions were absent in six of the cases from first to last. In one case a fit seems to have ushered in definite symptoms; but the phenomena of the fit are not recorded. There was no recurrence. There were only three cases attended with convulsions. In one they came on a few hours before death, in one the day before death, and in the third three days before death.

The temperature, as is well known, varies remarkably in this disease, and my cases accord with common experience. Some facts with respect to temperature are recorded in all but one, and in all of these the temperature was at some time or other above the normal. In one (1st) it never rose above 100·8°, and sank to 98·4° just before death, at which time the pulse was 90. In one (2nd) the variations were between 100° and 103·4°, but it sank to 98° at the time of death. In another (4th) it ranged from 99·2° to 102·6°; but fell during the last two days to 95·2°, being 95·4° just before death; at which

time the pulse (which had been 132) fell to 66. In another case (5th) the temperature varied from 101·2° to 102°, the pulse generally varying from 72 to 88. Before death the temperature was 102·2°, the pulse 140. In another case (6th) the temperature lay between 102° and 103°, and reached 103·6° at death. The pulse, which was 76 on admission, rose gradually to 160. In another (7th) the temperature was 104·2° shortly after admission, but varied during the rest of the patient's life from 99·2° to 100·5°, the pulse varying from 75 to 92. In a child of two (8th) the temperature ranged between 96° and 99° and the pulse was about 66. But the day before death the temperature began to rise, and at death it had reached 109°. The pulse was 132 when the temperature was 102°. In another instance (9th) the temperature was generally between 100·6° and 101·8°, but it rose rapidly at last and just before death reached 107°. When it was 102° the respirations were 55 and the pulse 189.

I make no attempt to explain these differences. But it is certainly curious that in some cases the temperature should fall notably as death approaches, while in other cases it should rise rapidly and to a considerable height.

Case 1. *Tubercular pleurisy apparently cured, followed by tubercular meningitis; optic neuritis; facial paralysis; convulsions.*—Samuel T—, a packer, æt. 32, was admitted under my care on the 30th May, 1884.

He was said to have been always healthy up to three months ago, when he had an attack of "congestion" of the left lung, on account of which he had to lie up for several weeks. But he recovered, it was stated, perfectly, and he was able to resume his occupation. He continued well up to May 17th, when he came home from work complaining of pain in the head and sickness. These symptoms continued; and on the 25th he became restless and strange in his manner.

A fairly-nourished man, with a flushed face. He is extremely restless, moving his arms about constantly, sometimes seeming to point at some object, sometimes scratching, sometimes picking at the bedclothes. He is continually talking or singing. His talk for the most part is unintelligible, but now and then a few words can be distinguished. When spoken to

he usually tries to answer, and to do as he is told, but he seems unable to put out his tongue. He often moves his mouth and tongue as if chewing. He is somewhat inclined to be merry, and says he has no pain in the head. He has right facial paralysis, but no affection of the ocular muscles or of the pupils. No paralysis of limbs. The optic discs are hazy and congested (especially the right), but there is no swelling or hæmorrhage.

Thoracic organs apparently normal. Appetite fair; no sickness; no difficulty in swallowing. The urine had to be drawn off with the catheter; it was dark, sp. gr. 1020, and contained a trace of albumen. Pulse 120, resp. 30, temp. 99·6°.

31st.—Much quieter than he was, but he is less sensible, his speech is more indistinct, and he is weaker. The water has to be drawn off. Temp. 100·8°.

June 1st.—He passed a fair night and continued very quiet up to 10.30 a.m. At that time he became slightly convulsed and insensible, and his breathing became laborious. These symptoms continued without much change, and about three o'clock, when I saw him, he was still insensible, and sinking. At this time his temperature was 98·4°, his pulse 90, and his respirations 24, but stertorous and attended with much effort. He died shortly afterwards.

Post-mortem examination.—The convolutions of the convexity of the hemispheres were flattened. There was a good deal of subarachnoid fluid at the base. There was much thick, œdematous lymph on and between the crura cerebri. The fissures of Sylvius were adherent, and in them were numerous miliary tubercles. The ventricles were distended with clear fluid and the parts about them were softened. There were no tumours.

The right pleura was firmly adherent. The left was lined throughout with firm, slightly translucent lymph, thickly studded with miliary tubercles. At the upper part the opposed surface was adherent. The lower part of the cavity contained about a pint of serum. The adhesions were no doubt the result of the thoracic mischief from which he suffered some little time before death. The lungs were healthy, and no tubercles were discovered in them.

With one or two slight exceptions all the organs were

healthy. The kidneys contained a few small tubercles; and two or three small round ulcers were found in the lower part of the ileum.

Case 2. *Two consecutive attacks of pleurisy, one on each side; paracentesis followed by convalescence in each case; subsequent tubercular meningitis; miliary tubercles in lungs and pleuræ.* —Thomas S—, æt. 32, a gardener, was admitted into hospital under Dr. Harley on the 23rd November, 1883, presenting symptoms of tubercular meningitis.

He had been in the hospital in August for effusion of fluid into the right pleura. Paracentesis was performed, and the fluid did not re-collect. He was again under treatment in October for effusion into the left pleura, for which he was tapped. There was very little reaccumulation when he left the hospital at the end of October. On both occasions he had considerable matutinal and evening rises of temperature, sweated much at night, became weak, and lost flesh; but no signs of pulmonary disease were detected.

On the 16th November he first complained of pain in the head and giddiness. He gradually got worse, and previous to admission his friends observed that he was strange in manner.

On the 23rd, when admitted, he was evidently much weaker than when he left the hospital. He complained of frontal pain, but no other evidence of brain disease was observed. He had no cough. Expansion of the left side of the chest was defective. There was diminished resonance over the lower third without much alteration of the voice- and breath-sounds, but there was fine crepitation at the base laterally. Right side of chest normal. Heart normal. Abdomen natural. Tongue thickly coated. Bowels confined. Urine clear, dark, 1020, free from albumen.

On the 25th it was noticed that he was sleepy and answered questions badly. He complained of pain in head and along back, and he was constantly making irregular jerky movements. During the next few days he was at one time sleepy, at another time noisy and talking incoherently; and his water had to be drawn off once or twice.

On the 28th, after a very noisy night, the left pupil was

found to be larger than the other. Otherwise his condition remained unchanged.

December 1st.—Talking all night, in spite of chloral and bromide. To-day lies curled up, and is constantly chattering incoherently. The left pupil remains larger than the other and inactive. Optic discs normal. In the evening he became unconscious and his breathing laboured; and he continued thus until the next morning, when he died. He had not, at any time, definite paralysis or spasm of the ocular or facial muscles, or of the extremities, and never any fit.

His temperature during the greater part of his stay in hospital ranged from 100° to 103·4°. On the day before death it sank for the first time to 89·6°, and just before he died it was 98°.

Autopsy.—No marked congestion of pia mater. The convex surface of the hemispheres was flattened. There was much serous fluid at the base. The anterior half of the pons, the crura cerebri, and the chiasma were covered with thick œdematous-looking lymph. Numerous miliary tubercles were found along the vessels in the fissures of Sylvius. The ventricles were distended with serous fluid and their walls were softened.

The right pleura presented moderately old adhesions, and was studded with miliary tubercles. The left pleura presented recent inflammation; a thick layer of lymph covered the lower two thirds of the lung, and the cavity contained a pint and a half of turbid fluid. The lungs presented miliary tubercles in the upper lobes, the left being most affected.

All other organs were healthy.

Case 3. *Old tuberculosis of lung and bowel; tubercular meningitis.*—C—, a tailor, æt. 42, had suffered from sciatica on left side for two or three months, and was getting better, when about five days ago he became feverish, and has since been suffering from symptoms having some resemblance to those of enteric fever. He has had quick pulse and elevation of temperature, and has been rambling. He was of temperate habits, and had had no serious illness.

I saw him with his medical attendant on the morning of May 19th, 1884. At that time he was rambling, talkative, appeared to have hallucinations, and was constantly trying to

get out of bed. He had been passing his water into the bed. His tongue was dry; there was no evidence of pulmonary disease; his heart-sounds were healthy, pulse 104; there was no pain, tenderness, or swelling of the belly; the bowels were not loose; no rash could be seen; his temperature was 102°. There was no discoverable disease in the thigh or hip. There was no squint or affection of pupils, and no paralysis.

He gradually got worse, and died comatose on the 21st. He had no fits.

At the post-mortem examination, at which I was present, there was found: congestion of the surface of the brain, with lymph in the subarachnoid tissue; much thickening and opacity of the membranes at the base, together with some recent lymph, and distinct but not very abundant miliary tubercles in the same situation; induration, scarring, and puckering of the left apex, with two or three minute cavities, all of old date; no tubercles in either lung; and a few small healing ulcers in the ileum. No other disease.

Case 4. *General tuberculosis; tubercle of the convex surface of the cerebrum; effusion into the ventricles; optic neuritis; convulsions.*—William M—, a schoolboy, æt. 8, was admitted under my care on July 16th.

Last April he had an attack of rheumatic fever. He was only in bed for a week, but he continued poorly subsequently. He has complained pretty constantly of pain in the forehead; has had palpitation and shortness of breath; for a week or two has had a little weakness on the right side, and since July 1st has occasionally been sick. Has had no failure of sight. About a month ago he passed an examination at a Board school. From the 2nd of July until the day of admission he was at some convalescent home.

On admission he complained of headache, but was perfectly sensible and presented no sign of paralysis; the tongue was coated but moist; his respirations quiet; his pulse 78, full, soft, and regular; there were no signs of cardiac or pulmonary disease; his abdominal organs seemed healthy, and his urine was free from albumen. He had no rheumatism. There was a rash, probably urticaria, on the chest and arms. Temperature 99·8°.

On the 18th his general condition remained much the same, but since admission he had always lain in bed with his face turned to the right and his neck stiff and painful if moved. There was marked tache cérébrale. Double optic neuritis was present. "One or two small hæmorrhages in each eye. Considerable swelling and congestion of each disc. Vessels buried at margin. Left neuritis probably older than right." No paralysis of ocular muscles or of any other part.

20th.—Drowsy, passing evacuations in bed. Sensible; complains of headache; lies in same position, and upper cervical spines tender. No convulsions; no hydrocephalic cry; no paralysis; no retraction of head or of abdomen; no vomiting; bowels confined. Pulse 133. Six leeches were applied behind the ears, and there was free bleeding.

21st.—Remained much the same until 3 p.m., when he was attacked with a succession of fits, lasting altogether about an hour and a half. In these the right arm and leg were chiefly convulsed. He remained unconscious afterwards. At 8.30 he became rigid for ten minutes. After this, though he lay quiet and took no notice of anything, he could be roused, appeared to be free from headache, and showed objection to being disturbed or moved. About this time his pulse was 60, somewhat irregular, and his respirations markedly of the Cheyne-Stokes character. He still had no sickness, and was able to swallow. His evacuations were still passed into the bed.

On the 22nd the child was wholly unconscious, and made no attempt to swallow. His breathing was noisy; his pulse 68, slightly irregular. The conjunctivæ were insensible, and his right arm was rigid.

He continued comatose, and died in this condition.

It may be here pointed out that the patient had no fits, excepting on the 21st, that he had no vomiting while in the hospital, that he never presented the hydrocephalic cry, that he had at no time any paralytic affection of the pupils or motor nerves of the eyes, face, and tongue, and that the only signs we ever observed of one-sided paralysis came on during the fits; and finally, that the temperature, which up to the 20th varied between 99·2° and 102·6°, sunk to the normal on the evening of the 20th, that on the 21st it fell gradually (not-

withstanding the fits) until it stood at 95·2° in the evening. On the 22nd it was still only 95·4°.

Autopsy.—On removing the dura mater the convolutions were found flattened, the surface dry, and uniformly congested. All along the margins of the longitudinal sulcus were scattered numerous tubercles. These extended for a short distance over the convex surface of the hemispheres, and were more or less abundant over the opposed surfaces down to the corpus callosum. Generally they were small, grey granules, and might have passed for pacchionian bodies. But those occupying the neighbourhood of the middle half of the sulcus were of larger size, opaque, and buff coloured, and had run together into irregular patches. They looked, in fact, at first sight, like patches of ordinary inflammatory lymph. Further examination, however, showed that they were nodules and tracts of cheesy tubercles, in some parts from one twelfth to one eighth of an inch in thickness. Similar deposits were found within and even at the bottom of some of the sulci connected with the flat surface of the hemispheres in the neighbourhood of the vertex. On removing the brain, its under surface was found to be much less congested than the upper surface, the cerebellum, in fact, and all the parts occupying the central line being unusually pale, and there was much accumulation of slightly opaline serous fluid in the subarachnoid space. At first sight there was no evidence of inflammation or of tubercles in this situation. Further examination, however, showed that there were a few grey granules about the flocculi, and that the duplicatures of pia mater in the fissures of Sylvius were much congested, thickened, and closely studded with grey tubercles. There were absolutely none at the actual base of the brain excepting, as just stated, about the flocculi. The lateral ventricles were much dilated, and contained a large quantity of serous fluid; the white matter immediately bounding them and the fornix was softened into a pulp. The hinder part of the velum interpositum was much thickened and evidently contained tubercles.

The pleuræ presented numerous miliary tubercles. The lungs were studded thickly with masses of cheese-like tubercles, which had here and there broken down into small cavities.

The peritoneum was dotted with tubercles, and caseous matter was found in the spleen and liver. Some of those in the latter organs were broken down into cavities. All other organs were healthy.

Case 5. *Tubercular meningitis; first symptom a fit, then drowsiness, partial coma, affection of sight, and paralysis of muscles of right eyeball.*—J. W—, a potman, æt. 37, was admitted on the 8th September, 1871. He is said to have had good health previously to his present illness. He had been observed to be failing in his memory for four or five weeks, when in the afternoon of August 28th, after tea, he was missing for about twenty minutes, and then walked into the bar, looking queer, with a severe wound on the head. When asked by a medical man who was sent for what was the matter, he said he did not know, and seemed not to know; but he was not paralysed, and did what he was told. The next day he was able to say more about himself, and stated that he recollected becoming giddy, but nothing further until he got up and walked into the bar. On the 30th he went about his work, but felt very tired in the afternoon and went to bed. For two days more he tried to work, and then gave up entirely. He seemed then gradually to lose the power of speech, at all events the power of getting his words out, and to become nervous and irritable, putting his hand frequently to his head; and subsequently he got drowsy. But he took his food, and retained the power of walking, up to the time of coming to the hospital.

On admission, and for some days subsequently, he was much in the condition above described. He was drowsy, slow to speak, but answering rationally, and appeared to have some headache; but there was no paralysis of any part, neither was affection of the abdominal or thoracic viscera detected, or rash. His temperature varied from 101·2° to 102°, his pulse from 72 to 88, and his respirations from 28 to 32. During this period a purge of castor-oil and one of croton oil were administered, and four ounces of wine were ordered daily.

13th September.—Constantly groaning and occasionally muttering; answers questions slowly but rationally, saying a

few appropriate words indistinctly. 11 a.m.—Temp. 100·3°, pulse 84. Head to be shaved, ice-bag to head.

15th.—Morning: Lies groaning and muttering, and constantly fidgeting with the bedclothes. Pupils dilated and insensible to light, but he can see dimly. Pulse rather irregular. Haust. sennæ co. statim. 3 p.m.—Constant low moaning and muttering, no paralysis of limbs, constantly fidgeting with the hands. There is now (since the morning) ptosis of right eyelid, and apparently almost complete paralysis of muscles of right eyeball with dilated and insensible pupil. The left eyeball moves freely in all directions, and the pupil is somewhat contracted, and does not undergo appreciable change on exposure to light. Very doubtful if he sees. He is too noisy and restless to allow of useful examination of the chest. Pulse 120; urine acid, free from albumen and sugar, sp. gr. 1026. 7 p.m.—Temp. 100·2°, pulse 120.

16th.—9.15 a.m.—Temp. 102·5°, pulse 130. 10 a.m.—Temp. 102·2°, pulse 140. Quite unconscious and quiet, no groaning. Eyes closed, right more perfectly than left. Right eyeball quite motionless when exposed, with dilated pupil; left moving pretty freely, pupil small. He died at 1.30 p.m.

It may be added that the patient had no fit of any kind while in the hospital, that during the last few days his evacuations were passed unconsciously, that he had no cough, and lastly that, though there was gradual aggravation of his cerebral and other symptoms (such as impairment of intelligence and of power of speech, muttering, fidgetiness, &c.), there was never any obvious proof of paralysis until the day before death.

Autopsy.—Dura mater tense. Convolutions flattened on upper surface of brain. Much yellow lymph at base of brain, especially along Sylvian fissures, over optic chiasma, and parts between this and the pons. It extended thence over the pons, medulla oblongata, under surface of the cerebellum, and along the velum interpositum. Some also was present in the sulci at the sides of the cerebrum. The margins of the Sylvian fissures were firmly adherent, and on separating them tubercles were found to be abundantly present in them, and extending thence to the bottom of the sulci between most of the convolutions connected therewith. These were grey, hard, closely

aggregated, in many cases as large as a hemp-seed, and had in many parts run together into irregular flat masses, moulded to the deeper parts of the sulci, and encroaching on the brain substance. Tubercles were also scattered over the central area of the base of the brain. There was much congestion of the pia mater in the affected regions. Brain substance generally healthy. There was much fluid in the lateral and other ventricles.

In the apex of the right lung were two caseous masses, the larger of which was as big as a hazel nut, and in their immediate vicinity a good many miliary tubercles. There was no further disease in this lung. No tubercles were found in the left lung or elsewhere in the body.

The remaining organs were healthy.

Case 6. *Tubercular meningitis, symptoms of very short duration; headache, drowsiness, and incoherence; affection of ocular muscles.*—Sarah A. T—, a servant, æt. 27, was admitted under my care on the 23rd April, 1877. She had returned to her situation from an Easter holiday on the 9th April, and complained on arriving of headache, irritability, loss of appetite, and drowsiness. Her headache and irritability persisted, but she continued to do her work up to two days before admission. On the 21st she got up and had a good breakfast, though she was still complaining of her head, and shortly afterwards she was found sitting in front of the fire with a vacant look, and in evident confusion of mind. Towards the evening she became "delirious." She remained drowsy and stupid, and was brought to St. Thomas's about 6 p.m. on the day of admission.

She was then very drowsy and somewhat difficult to rouse, but was sensible and complained of frontal headache, and lay with the head somewhat retracted. The pupils were dilated and equal, and acted slightly to light. No paralysis of any part. Tongue thickly coated; sordes on teeth; no sickness; bowels confined. Heart and lungs apparently healthy. Pulse 76, resp. 44, temp. 102°.

24th.—In much the same state. Muscles of neck rigid. In the morning pulse 84, resp. 36, temp. 101·8°; in the evening pulse 116, temp. 102·2°. Passed her water into the bed.

25th.—In the morning was drowsy, but sensible when aroused, and recognised her friends. Said her head ached very little. Tongue brown and dry. Bowels not open since admission. Pulse 128, temp. 102°. Urine (which had to be drawn off) sp. gr. 1018, one sixth albumen. 2 p.m.—Almost insensible, constantly chattering indistinctly. Right eyeball moves independently of left, which is generally stationary. Pulse 152, temp. 102·2°. 11 p.m.—Still chattering, but not intelligibly. Pupils insensible to light. Pulse 154, temp. 103°.

26th.—Insensible and sinking throughout the day. Pupils unequal (left dilated, right contracted), not acting to light. The pulse was 160 in the morning, at which time the temperature was 102°; this rose during the day to 103·6°. Death occurred at 6 p.m.

The patient had neither sickness nor convulsions, nor any paralysis excepting the imperfect paralysis of some of the ocular muscles.

At the post-mortem examination (of which the detailed account has been mislaid) there was found extensive tubercular meningitis, the tubercles being very abundant and concreted into irregular plates at the bottom of many of the sulci connected with the fissures of Sylvius. The ventricles contained much fluid. Numerous tubercles were scattered throughout the lungs.

Case 7. *Tubercle of brain; tubercular meningitis; history of otorrhœa; subcutaneous abscesses; extreme pain in head; optic neuritis.*—William B—, an errand-boy, æt. 14, was admitted under my care on the 12th May, 1883. When five years old he had measles; and from that time, or a little earlier, he had a discharge from one of his ears, which continued on and off until he was seven. Nine months ago he had a return of the discharge lasting for a fortnight. About a year back the patient began to be listless and indisposed to move about; and eight or nine months ago he had an attack of "low fever" which remained on him for two weeks. After this he went to work at a portfolio maker's as an errand-boy, but at the end of about three months was discharged as "unfit for work." On several occasions during this period he

had fallen down from giddiness on crossing the road, and nearly been run over. For the last four months he has suffered from nausea and vomiting, and the bowels have been constipated. Three months ago he became a surgical out-patient with abscess of the face and leg; since then, several others have made their appearance in the abdominal walls and the extremities. He has had severe pain in the head and back of the neck during the last six weeks, and has slept badly, waking up with a start and screaming. His eyesight has become much impaired of late. He has had no fits and no rigors.

On admission he was a not unhealthy-looking lad and was quite sensible. But he was suffering from intense pain in the head (not referred to any special part) and in the neck, which was constant, but attended with exacerbations coming on every minute or two and making him cry out. He could stand and walk a little, but fell about, as though from giddiness, when upright. He had no paralysis of face, tongue, eye-muscles, or any other part, but his sight was dim, so that he could not distinguish the forms of objects at a little distance. No colour blindness. "Pupils normal. Double optic neuritis, more intense in the left than in the right eye, where also there are white patches in the retina. No hæmorrhages. The changes are of many weeks' duration" (Mr. Nettleship). The head was kept very still, every movement of it aggravating the pain down the neck.

On either forearm, just above the wrist, was a fluctuating swelling about as large as a chestnut, and there were three or four larger ones on the legs; and on several other parts of his person were the scars of abscesses which had discharged and healed recently. None of the joints were affected. There was no evidence whatever of thoracic or abdominal disease. The urine was free from albumen. The heart's action was very variable, the pulse being at one time rapid, at another slow. He did not complain of earache; neither was there any discharge from the ear. The temperature was 99·8° on admission, but at night rose to 104·2°.

On the 14th it was remarked that he had been much relieved by one or two subcutaneous injections of morphia (gr. $\frac{1}{6}$), which had also sent him to sleep. But when the

effects had passed off he was still suffering from intense pain in the head and still constantly screaming out. There was general hyperæsthesia; and his respirations, as well as his pulse, were irregular.

During the next two days there was little change. The patient was still kept largely under the influence of morphia, which gave him ease, and immediate, prolonged, and profound sleep. At times, however, he woke up, and then all his old pains and screaming returned. On the 15th it was thought that the tongue was protruded slightly to the right; on the 16th ptosis of the left upper eyelid was observed; and on the 17th there was a slight indication of left facial palsy. But on this day he was only partially conscious.

He was semi-conscious during the night of the 17th, but became comatose during the morning of the 18th and died, without further material change, at 3 p.m.

It may be added that the bowels were much constipated while he was in the hospital; that the urine generally contained phosphates, but on the day of his death presented also a little albumen; that the temperature after the first night never rose above 101·6°, and generally varied between 99·2° and 100·5°; and that the pulse ranged from about 75 to 92. On the day of the child's death Mr. Clutton examined the left ear and found it apparently free from disease. The right he was unable to investigate.

Autopsy.—Body well nourished. There was an abscess beneath the skin of the left forearm, and another similar one on the outer side of the left leg, each of which contained about two drachms of pus.

The surface of the brain was flattened and dry. The pia mater over the convexity of the hemispheres was congested. At the base the membranes were opaque and thickened, especially in the fissures of Sylvius, where there were numerous miliary tubercles. There were very few tubercles in the interpeduncular space and elsewhere at the base. No recent inflammatory lymph was discovered.

In the substance of the cerebrum were several masses of yellow tubercles about the size of peas; one in the cortex of the under surface of the left temporo-sphenoidal lobe; two in the cortex of the upper part of the left præfrontal lobe; one

in the right first frontal convolution near its junction with the ascending frontal; and three or four in the left centrum ovale majus.

The cerebellum presented two similar masses; one in the outer border of the left lobe, and one in the corresponding situation on the other side.

The pons, crura, medulla oblongata, and ganglia at the base of the brain were healthy.

The pleuræ were studded with miliary tubercles and were partially adherent.

The lungs presented numerous scattered tubercles of the same kind, and in the apices a few larger masses of yellow tubercle. No cavities were discovered.

There were a few tubercles in and upon the liver and spleen, and a few tubercular ulcers in the large intestine.

All other organs were healthy.

Case 8. *Tubercular tumours in the brain; deposit of miliary tubercles in the fissures of Sylvius, without meningitis; dropsical accumulation in the ventricles; great drowsiness; absence of fits, paralysis, and optic neuritis.*—Annie C—, a little girl two years old, was admitted into the hospital under my care on the 6th July, 1883. A few months before she had been irritable and drowsy. But her present illness was supposed to have commenced on the 1st July, when she was attacked with diarrhœa, vomiting after food, loss of appetite, and inability to stand. She also became again irritable and drowsy and apt to scream at times.

On admission she was fairly plump, but drowsy and fretful on being disturbed. She did not seem in pain and had no photophobia; and the bowels were relaxed, the motions being dark.

During the next week the child continued drowsy and irritable, but there was no vomiting or diarrhœa; the pulse was irregular, and about 66 in the minute; the respirations were quiet and natural; the vessels of the eyelids were congested. There were no fits, no paralysis; and the temperature varied between 96·8° and 99°.

On the 12th the eyes were examined ophthalmoscopically and found healthy.

On the 13th the face was noticed to flush up at times, and a little twitching was observed on the left side of the face.

The child continued very drowsy, the temperature low, the pulse slow and irregular, and the bowels confined until the 17th. On that day the temperature rose from 96° in the morning to 101·2° in the evening; the pulse increased to 132; and it was noticed that the tache cérébrale was very distinct; the general condition of the child, however remained unchanged.

On the 18th the child was still difficult to rouse, and it suffered from retention of urine. At 9 a.m. the temperature was 96°; at 2 p.m. 102°; at 5 p.m. 103°; and it varied between this and 102° during the remainder of the day. At midnight it stood at 104°, and at 3.15 a short time before death, it had risen to 109°. The surface was flushed and there was much perspiration.

No fits, no paralysis, no affection of the eyes or pupils were ever observed; and while the child was in the hospital there was never any sickness. The most noticeable feature of the patient's illness was the constant drowsiness which she presented.

Autopsy.—The head only was allowed to be examined. On removing the dura mater the convolutions of the brain appeared flattened and the surface dry. There was no congestion. On removing the brain the under surface was seen to be pale, and a considerable quantity of subarachnoid fluid was found in this situation. No tubercles were recognised in connection with any part of the superficial pia mater, but on opening the fissures of Sylvius, the pia mater within them was discovered to be thickened, hardened, and dotted pretty thickly with minute grey tubercles. The brain substance was generally soft, and the lateral ventricles were largely distended with serous fluid. On careful examination three tubercular masses were discovered: one, the size of a small cherry, in the anterior part of the optic thalamus, and encroaching on the neighbouring internal capsule; one, the size of a pea, in the anterior part of the left cerebral hemisphere; and a third, also about as large as a cherry, embedded in the posterior part of the middle lobe of the cerebellum, but connected with the surface.

Case 9. *Tubercular meningitis; convulsions; optic neuritis; partial paralysis of right third nerve, &c.; death with high temperature.*—James S. W—, a schoolboy, æt. 7, admitted under my care September 12th, 1882. He began to be ill on the 1st of the month, when he complained of pain in the head and feeling tired. Since then he has been gradually getting worse. The headache has increased, he has been very fretful, he has often woke up from sleep screaming, and has had frequent convulsions of the right arm and leg. There has been no sickness, and the bowels have been constipated. Yesterday he complained of pain in the back of the neck, and he rambled.

He is anæmic and delicate-looking, and complains of pain in the back of the head, which also runs down the neck. The right eyelid droops, and on trying to look upwards the right eye lags. No other ocular paralysis. Pupils equal, acting to light and accommodation. Sight fairly good. Double optic neuritis. The left side of the face seems a little weaker than the right. Tongue protruded straight. No paralysis of limbs. No loss or impairment of sensation.

He is very irritable; at one moment is asleep, then wakes with a plaintive cry, two or three times repeated; at one moment he is lying down, then rises to the sitting posture, throws his arms about, and falls down again. He can be roused to answer questions, and responds to his name, but is constantly rambling when awake. At one time he cries for his father and mother, frequently he sings snatches of popular airs, and at times he fancies he is feeling in his pockets for money. Tache cérébrale fairly well marked. Nothing abnormal in chest or abdomen. Tongue clean. Motions passed into the bed. His breathing is of the Cheyne-Stokes character. Temperature from 100·6° to 101·8°, pulse 72.

14th.—More drowsy and difficult to rouse; no squinting, no additional paralytic symptoms. Takes food less readily than he did, but is not sick. Cries out at times. Has had several attacks of convulsions of the left side of the body to-day and yesterday. The water has had to be drawn off. The respirations, which continue more or less of the same character as before, have been about 30 in the minute; the temperature

has varied between 100° and 101·8°, the pulse between 78 and 130.

15th.—At 7 a.m. he had a general convulsive attack. At that time his temperature was 101·2°. At 10.30 p.m. he was insensible, breathing noisily and irregularly, and at the rate of 56 in the minute; his pulse was 189; his temperature 102°; his eyes moved independently of one another, and the pupils, which were widely dilated, did not respond to light. From this time he gradually sank, and the temperature rose rapidly. At noon it was 105·2°; at 4, 105·8°, and at 8 (just before his death), 107·3°. He had several convulsions during the day.

Post-mortem examination.—The surface of the brain was generally congested. There was some opacity and thickening of the membranes over the pons, and in the interpeduncular space, and some recent inflammatory lymph along the Sylvian fissures. The right fissure was more affected than the left, and the right third nerve was more embedded in adventitious matter than the other. Only a few miliary tubercles were discovered. The substance of the brain generally was healthy. The lateral ventricles were distended with fluid. There were a few miliary tubercles in the spinal arachnoid.

A little recent lymph between the lobes of the left lung, and some broncho-pneumonia of the lower lobe. Right lung and pleura healthy. All the other organs were healthy, and no tubercles were found anywhere in them.

Case 10. *Tubercular meningitis; symptoms much resembling those of delirium tremens; double vision; no other paralysis; no convulsions.*—R. W. D—, a clerk, æt. 21, was admitted under my care on the 14th May, 1868. He was a well-made, well-conditioned young man. He stated that his present illness began fourteen days before admission with severe pain about his right shoulder, which was followed the next day by pain across the forehead, eyes, and cheekbones. The latter pain has continued, and prevented him from sleeping at night. He has occasionally seen double. His appetite has been bad, his bowels constipated, but there has been no sickness or nausea, and he has had no cough. He said that he had a similar attack to the present in 1866, and that since then he has had one or two slight attacks of the same kind. His

mother and brother died of consumption. He now complains of pain across the temples and of double vision, and his temples are somewhat tender. The eyes look healthy, and the pupils contract readily. He is very weak and somewhat tremulous, but there is no paralysis, and no apparent affection of any of his organs of sense beyond that already adverted to. He appears to understand everything that is said to him, and answers rationally. Tongue fairly clean; heart's sounds healthy; pulse 84; breath-sounds healthy.

Ordered on admission to be blistered on the back of the neck, milk diet, and beef tea. Next day five grains of quinine three times a day.

18th.—Seems much worse. Has been very garrulous ever since admission, and has had little sleep. Indeed he has at no time slept for more than an hour at a time, and has not slept at all during the last forty-eight hours. He is now very feeble, so feeble that he cannot raise himself in bed, and his arms and legs tremble, especially when he tries to move them. His lips also are tremulous when he speaks. He now chatters almost incessantly, answering questions readily, and for the most part speaking rationally, but every now and then becoming a little incoherent. He seems to understand very well everything that is said to him, and everything which he observes about him, and is not in any degree maniacal or apparently under the influence of delusions. He complains chiefly of pain across the eyes, but says also that he has pains all over him. Pupils dilated, but contracting readily to light. Sees double. Skin natural; no rash. Tongue dry, furred, and fissured; somewhat thirsty; little appetite; no sickness. Bowels relieved yesterday. Neither motions nor urine passed involuntarily. Urine free from albumen. Heart's sounds healthy. Pulse 84. Chest resonant; breath-sounds healthy, except that the expiratory murmur seems prolonged at both apices; no cough. No abdominal enlargement or tenderness.

21st.—Still gets worse. Has scarcely had any sleep. Has still been talking constantly, and has been now and then troublesome. The urine has been several times passed in bed, and the bowels were yesterday relieved into the bed after the use of an enema. Has continued generally

tremulous; he answers rationally when spoken to, but talks incessantly when left to himself, incoherently and on all sorts of subjects, sometimes preaching, sometimes talking of business. Pupils dilated, but acting to light; when a pen or pencil is held up before him he says there are two. Tongue furred and dryish. No sickness. Breathing rapid. No cough. Skin not dry. Liq. Morph. Hydrochlor. ʒiij, ex Aq. Camph. h. n. Wine 6 ounces.

22nd.—Slept a little last night after his morphia. Is much quieter this morning, and evidently still under its influence. The pupils are contracted. He still chatters quietly, and his lips are tremulous. Tongue dry. Skin dry. Pulse 120. Head to be shaved. Ice to the head. Ol. Tiglii ♏j, statim.

23rd.—The croton-oil acted violently; and all the evacuations (except the first) were passed into the bed. Has slept fairly well. Still chatters a little at times, but not nearly so much as he did. Answers sensibly. His limbs are less tremulous. No apparent paralysis. Tongue moister, but furred. Takes food readily; no sickness. Skin cool. Pulse 124. Breathing rapid.

25th.—Seemed improving up to yesterday morning. Since then he has talked a great deal, and talked during the greater part of the night. But towards the morning he became unconscious. He seems to have had a good deal of abdominal pain yesterday; and his bowels were relieved several times last night and this morning. He is now unconscious, breathing rapidly, and having much mucous accumulation in his throat. The eyes diverge. Lips dry. Pulse 136. Water to be drawn off regularly. Emp. Lyttæ capiti.

26th.—Is said to have been rather more sensible since 9 last night, but is now again almost entirely unconscious. He does not attempt to answer or to protrude his tongue. He moves his head and hands about a little, and his breathings (which are not now rapid) are attended with a prolonged groan. The bowels have been relieved several times. Abdomen large and tympanitic. Lips dry and black. Pulse 124.

He remained in this state until 2.30 a.m. on the following morning, when he died quietly.

Autopsy.—There was an increase of the subarachnoid fluid.

The arachnoid and pia mater were thickened along the margins of the longitudinal fissure and along the fissures of Sylvius. At the base of the brain, and all over the cerebellum, the subarachnoid tissue was occupied by soft gelatinous lymph. At the base were numerous miliary tubercles. There was slight distension of the ventricles with serum. The substance of the brain was somewhat softened, but otherwise healthy. Vessels at base healthy.

Some old pleural adhesions were present. The lungs were congested and œdematous, and thickly studded with miliary tubercles. At the apices were several patches of commencing softening. A few small ulcers were found in the lower part of the ileum and in the cæcum. They were probably tubercular, but no tubercles were found. The liver was large and fatty. All other organs healthy.

THE THROAT DEPARTMENT OF ST. THOMAS'S HOSPITAL IN 1883.

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INTRODUCTION.
PART I.—1. Abscess of the soft palate. 2. Mycosis pharyngis leptothricia. 3. Benign neoplasms of the soft palate and uvula. 4. Indications for, and methods of, removal of the tonsils. 5. Isolated œdema of the vocal cords. 6. Submucous abscess of the larynx. 7. A case of laryngorrhœa. 8. Benign neoplasms of the larynx. 9. Laryngeal tumour of doubtful nature. 10. Eversion of left ventricle of Morgagni. 11. Carcinoma of the larynx. 12. Etiology of the cases of paralysis of the laryngeal abductors observed in 1883. 13. Anchylosis of crico-arytænoid articulation. 14. Gumma of the trachea.
PART II.—Statistics of diseases treated in the Throat Department.

THE introductory remarks of my first communication in St. Thomas's Hospital Reports (*vide* vol. xii, p. 77, 1882) explain the principles adopted in the following contribution. I only wish to add, that I hardly know whether to congratulate myself that the number of interesting cases observed during the past year is so great, or to express my regret that I find myself again in the position of having to pass over in silence a good many affections and cases, which in my opinion well deserve discussion. But whilst feeling that I must not overstep the limits which can be assigned in the reports of a general hospital to a special report, I have thought it better to discuss somewhat thoroughly *one* question, which has long engaged my attention, viz. the prejudice, unjustified in my opinion, against tonsillotomy in suitable cases, than to review in a hurried and necessarily somewhat incomplete manner a great many interesting points observed during the last year.

1. *Abscess of the Soft Palate.*

A woman, æt. 63, applied on November 20th, 1883, complaining of an "ulcer in the throat," which was said to have made its appearance after a free discharge from the right ear had spontaneously ceased. At the same time she complained of dysphagia and great pain in the right side of her head.

On examination it was seen that the right half of the soft palate bulged considerably forward. There was a constant discharge of semipurulent fluid, which came down in front of the swelling, but the exact point of exit could not be accurately ascertained. The whole of the posterior wall of the pharynx was constantly covered with the same purulent secretion. Rhinoscopic examination was very difficult, and it was only ascertained that the parts behind the right half of the soft palate were considerably swollen and covered with matter. Digital exploration simply corroborated the result of the rhinoscopic examination. There was some swelling of the cervical glands both in front and behind the right sternocleidomastoid muscle. A perforation was detected in the anterior segment of the right tympanum.

The whole state of things was very unusual. An inflammation of the right tonsil could be entirely excluded, this gland having undergone complete atrophy. There was no evidence of syphilis in the patient's history, nor were there any scars pointing to old mischief of this character. Considering her age, the assumption that we had to do with a malignant growth in the nasopharyngeal cavity seemed not unlikely, and the swelling of the cervical glands appeared to support such a diagnosis. On the other hand the development of the affection seemed to point to an inflammatory origin, and the quantity of the secretion, which was produced within a very short time, certainly was greater than I have ever seen in a case of cancer of the pharynx. Thus the possibility of an abscess situated in the submucous cellular tissue of the anterior palatinal arch could not be omitted from consideration, although the patient's age seemed to offer a valid argument against such an assumption.

The diagnosis was left *in suspenso,* and the patient was ordered to take

℞ Potassii Iodidi, gr. x.
Infusi Cinchonæ, ℥j., t. d.,

as well as

Trochisci Krameriæ.
One lozenge every three hours.

She came back on November 27th, when she was much better. The suppuration had entirely ceased and the parts merely looked congested. She felt very weak, and Mistura Quiniæ cum Ferro was substituted for the Iodide of Potassium. She continued to attend till December 18th, when she was dismissed cured.

The case is communicated *in extenso*, because abscess of the cellular tissue of the soft palate, though frequent enough in young individuals, in whom it is often mistaken for a true tonsillar abscess, is, I believe, very rare in patients of declining years.

2. *Mycosis Pharyngis Leptothricia.*

On April 3rd, 1883, R. Th—, porter, æt. 71, came to the Throat Department complaining of sorethroat from which he stated he had suffered for one week. The soft palate and the uvula were greatly congested and the latter was very œdematous. On the free surface of both these parts there were patches of a milky-white exudation which were distinctly separated from each other and could be detached with forceps without bleeding. Under the microscope small rods and longer threads as well as masses of minute granules were seen, characterising the bulk of the exudation as consisting of masses of leptothrix buccalis. Neither the tonsils nor the root of the tongue were affected. The patient was ordered

Gargarisma Potassæ Chloratis,

and

Trochisci Acidi Tannici.

He only attended once more, when he stated he felt much better and the peculiar exudation had entirely disappeared.

I have given the name of Mycosis Pharyngis Leptothricia to the affection just described, because its essential feature consisted in the presence of the fungi and spores of leptothrix as well as of masses of zooglœa in pharyngeal exuda-

tion, and because the case thus seems to belong to the category recently described under the same name by my friend Dr. Hering, of Warsaw (*vide* 'Zeitschrift für klinische Medicin' Bd. vii, H. 4). At the same time, however, the case differs in several respects from the few cases so far described and collected by Hering. Whilst in all of them the tonsils, and in comparatively many the base of tongue were affected, in this case these parts had remained entirely free. Again, whilst it seems from the treatment adopted, that in most of these cases the mycosis had the form more of an infiltration than an exudation, in my case the fungus did not appear to perforate the epithelial layer, but only to form a covering on its surface; hence the bloodless removal of several patches. Thirdly, the rapid disappearance of the exudation does not accord with the experience of other observers, who expressly mention its great tenacity and tendency to reappear after removal. I regret, that pressure of work did not permit me to submit the patches to careful microchemical examination and that the disappearance of the exudation prevented me from repeating the microscopical examination; but the appearance of the first microscopic specimen was so characteristic of leptothrix, that I have no hesitation in putting the case under this head.

3. *Benign Neoplasms of Soft Palate and Uvula.*

Three cases of this kind came under observation in 1883. In all three the outgrowth was of a papillomatous nature, and in all three the patients belonged to the male sex.

In the first case, that of a boy æt. 13, there was a small pedunculated, papillomatous outgrowth about the size of a bean, of an irregular, reddish, mammillated appearance, hanging down from the left anterior palatinal arch.—In the second case, in which the patient was a lad æt. 16, a small papilloma was situated on the left side of the uvula.—The third case, that of a man, æt. 30, was rather remarkable for its curious appearance. On both sides of the velum, at about equal distances from the uvula, hung down two reddish, longish outgrowths, almost symmetrical not only in situation, but also in form and appear-

ance. They were so similar to the uvula that, at first sight it almost appeared as if the patient had *three* uvulas! In none of the cases did the outgrowth apparently cause much inconvenience, but as in all three the patients wished to get rid of them they were easily removed with cutting forceps. The two outgrowths belonging to the last case were microscopically examined by Mr. Stewart and found to be of true papillomatous structure.

They are now in the museum of the hospital.

4. *Indications for and Methods of Removal of the Tonsils.*

In my last report I discussed the indications for uvulatomy, and in the paragraph devoted to that subject strongly protested against too frequent a performance of that operation. The tenor of the present article will have to go very much in the opposite direction. Whilst I have no doubt that the tonsils are removed in a good many cases, in which this operation is by no means absolutely necessary or even desirable, yet I firmly believe, that on the whole tonsillotomy is too rarely performed, and often too long deferred in really suitable cases. I have come to this conclusion from the tenor of a good many writings on the question as well as from personal experience.

The causes of the unwillingness of many general practitioners, either to perform tonsillotomy themselves or to have the little operation performed by others, are so numerous, that I can hardly claim to exhaust their list in the following paragraphs. Fresh reasons, even more astoundingly baseless than the old familiar ones, are, in fact, almost yearly adduced against the performance of the operation. As a very recent example of this I might refer to a remarkable clinical paper signed "B.," in the 'Medical Times and Gazette,' March 8th, 1884, of which I shall have to speak hereafter. I will, however, try to discuss, as an introduction to my subject proper, all points known by me to be raised in opposition to the operation, because it is in this manner only, I believe, that one can hope to demolish the different forms of superstition with which this subject has of old been surrounded, and to pave

the way for a consideration of this question more in accord with our present pathological views.

For this purpose we must begin by discussing the consequences of the presence of enlarged tonsils so far as the general health is concerned.

Chronic enlargement of the tonsils may act injuriously in two different ways, viz. (*a*) by mechanically obstructing the upper air- and food-passages; (*b*) by maintaining a liability to frequent, often very painful, attacks of inflammation within the glands themselves or in their immediate neighbourhood. Different, as these consequences are, pathologically considered, they operate in the great majority of cases conjointly. Examples, it is true, are met with, in which even constantly recurrent tonsillitis does not lead to any notable increase in the size of the glands, and, on the other hand, one sees cases, in which it is positively stated, that the patients, though very seriously inconvenienced by the presence of enormous tonsils, are by no means liable to frequent attacks of quinsy or general sorethroat. But such cases certainly form exceptions to the rule, and in the vast majority of instances the story is monotonously similar. There has first been a quinsy, after which the glands have returned to their normal size or nearly so; a second attack has followed, leaving the tonsils somewhat larger than they were before the acute relapse; after the third and fourth attacks their size has still further increased, and finally the mechanical obstruction has become constant, aggravated only from time to time by a fresh acute attack, the intensity of which, however, varies very much in different cases.

It hardly needs to be pointed out that the frequent repetition of these attacks, accompanied almost always by high fever and serious constitutional disturbance, and often succeeded by a state of extreme prostration, ought under no circumstances to be a matter of indifference to the medical adviser, for frequently enough it is spontaneously stated by the patient himself, if an adult, or by his friends, if he be a child, that these constantly recurring attacks interfere with occupation, development, and general health. Moreover, the frequent attacks of catarrh of the Eustachian tubes, which often accompany the tonsillar inflammation, not rarely leave

behind a chronic state of congestion of these canals accompanied by deafness. At the same time a general weakening of the mucous membrane of the throat is being produced, making this part a point of predilection not only for catarrhal but also for infectious diseases, and predisposing in an eminent degree to diphtheria.

But, after all, these inflammatory sequelæ are, especially if the patient be a child, subordinate to the serious consequences for the whole organism following mechanical obstruction of the upper air- and food-passages.

The consequences here referred to are, in order of frequency, the following :

a. Impossibility of breathing sufficiently through the nose. The patient is compelled to keep the mouth constantly open, and the face assumes a well-known somewhat stupid expression.

b. Snoring during sleep.

c. Insufficient entry of air into the lungs, especially during sleep, with subsequent deterioration of the blood and general impairment of nutrition.

d. Nasal voice and defective articulation.

e. Insufficient mastication of food; dyspeptic troubles.

f. In severe and long-standing cases a deformity of the chest walls, known under the name of "pigeon-breast."

It is obvious that the presence as well as the intensity of these symptoms and sequelæ entirely depends upon (*a*) the degree of hypertrophy of the glands; (*b*) the direction in which they have grown. Thus, whilst in some cases all the sequelæ here enumerated may be present, and all of them highly developed, in others, where none of them are wanting, they give but little trouble; and again in another class one or more of them may predominate, the others being either absent or so little developed that they are altogether overlooked.

As it is within the daily experience of every practitioner, that both, the inflammatory and the obstructive, results not only may, but indeed do, either in whole or in part, accompany higher degrees of tonsillar hypertrophy, the conclusion might seem justified, in view of the serious nature of many of these symptoms, that practically there is unanimity in the profession as to the desirability of preventing, if possible, their

continued existence and further development, and that there can be only one point about which differences of opinion may be possibly entertained, viz. the question: *when* the moment for surgical interference has come, if no other treatment has proved successful? In reality, however, matters are very different. I would not have ventured to raise anew the apparently trite question of which this paper treats, did not, as already observed, a nine years' experience, gained under exceptional opportunities for observation, teach me, that not only the public but also a great many practitioners entertain very extraordinary and, indeed, superstitious views about almost everything that is connected with the tonsils—views, the best reply to which would perhaps be a smile, were it not a pity that so many people should suffer, perhaps a lifetime, in deference to ridiculous nursery tales! My language may seem strong, but really it is not too severe thus to designate opinions like the following, viz. that tonsillar enlargement has a *protective* (!) influence against infectious diseases, and that excision of the tonsils leads not only to deterioration (!) of the voice, but even to impairment of the sexual functions (!). I beg to state distinctly, that I have been asked questions about all these points not only by anxious parents, but also by serious practitioners. It is true that absurdities of this sort are not very frequent, but the milder forms of what might fairly be called "tonsillar superstition" are still, so far as my experience goes, prevalent to an astonishing degree in this country. Amongst these latter I must mention the belief in the invariably spontaneous atrophy of enlarged tonsils at the time of puberty; the idea that after extirpation the glands are very likely to grow again; the advice that an evidently unavoidable removal may be postponed for a few months or even years, because the patient is at present "too weak" to undergo the operation!

The actual survival of most of these forms of superstition could easily enough be demonstrated by quotations from very recent literary productions, but apart from those the specialist has unfortunately but too frequently the opportunity of convincing himself of their existence. There is hardly a week in which I am not asked, "Do you really consider it necessary

that these tonsils should be cut? My doctor told me the child would grow out of them." [N.B.—This in cases of children *five* years old with open mouth, nasal voice, defective hearing, constant sore throats, &c.] "Had we not better wait until the boy is a little stronger? Will they not grow again?"

Questions like these, the disagreeable duty of having to give advice which is diametrically opposed to that of the trusted family adviser, the observations I have the opportunity of making in the children of personal acquaintances who, from a weak-minded sentimentality, superstition, or cowardice, in order to "spare the poor little one the operation," rather see him suffer year after year, get more and more deaf, stupid looking, defective in speech, &c., all these points have induced me to choose this subject for discussion in this year's report. I will not attempt to treat it learnedly, but from a simple common-sense point of view, and guided mostly by my personal experience. The questions at issue are excessively simple; the reply to them ought to be, I think, equally plain.

First then let me briefly say, in answer to these questions which as I say, have been repeatedly put to me:

1. It is not true that tonsillar hypertrophy has a protective influence against infectious diseases. The *very opposite* of this is the fact, as most busy practitioners will be able to say from experience, as I have over and over again seen myself, and as has been, to quote one well-known example only, so sadly shown by the tragedy in the Hessian Grand Ducal family.[1]

2. It is not true that excision of the tonsils deteriorates the voice. Again, just the opposite of this is the fact. The pharyngeal cavity serving as a sounding-board to the voice, it is obvious that the removal of obstructing masses, which not only prevent the normal vibrations of the column of air used in the production of sound but also divert it in an anomalous direction, must lead to an improvement in the *quality* and in the *timbre* of the tone. This is actually the case, as I have often convinced myself. I do not, however, believe that an *extension of the range* of the voice usually

[1] Vide Eigenbrodt, 'Brit. Med. Journal,' 1879, i, p. 6.

follows removal of the tonsils, and am of opinion that in the cases in which such an extension is stated to have followed extirpation or destruction of the glands, other circumstances must have been simultaneously at work.

3. The belief, that removal of the tonsils is fraught with disastrous consequences for the sexual functions is sheer nonsense. I personally know a good many men and women whose tonsils have been removed when they were children, and who to-day are parents of a numerous and healthy progeny.

I dispose in this categorical manner of these points because evidently the *onus probandi* rests with those who make startling statements, not with those who disbelieve them. But the next points on our list are not so easily dismissed, for in all of them there is some element of truth which it would be wrong to deny.

First then let us consider the belief, so firmly rooted in the minds of many practitioners, viz. that the tonsils, if left to themselves, will undergo spontaneous atrophy at the time of puberty.

As long as this statement is simply made as a conclusion from general experience, I have nothing to say against it. Hypertrophy of the tonsils is undoubtedly *most frequent* in young subjects, *i.e.* in persons from five to twenty years of age. But if in a case in which serious symptoms from tonsillar enlargement make their appearance at the age of, say, ten years, it be held forth as a consolation to the alarmed parents that "the child will grow out of it," I must very decidedly take exception to such a statement. I will at once justify my position by facts and numbers. Subjoined are two tables, containing analyses of the ages of patients suffering from enlarged tonsils. The first, which refers to no less than 1000 cases, is derived from Dr. Morell Mackenzie's work, 'Diseases of the Throat and Nose' (vol. i, p. 61); the second represents my own experience during the last year only at St. Thomas's Hospital:

Ages of patients suffering from enlarged tonsils.

Mackenzie's Table.		*My own Table.*	
1 to 5 ... 84 5 to 10 ... 181 } Under 10 years	265	1 to 5 ... 7 5 to 10 ... 12 } Under 10 years	19
From 10 to 20	382	From 10 to 20	20
„ 20 to 30	219	„ 20 to 30	8
„ 30 to 40	103	„ 30 to 40	1
„ 40 to 50	27	„ 40 to 50	1
„ 50 to 60	3		
„ 60 to 70	1		
	1000		49

Small as my own list is, compared with the first one, yet practically the results of both are identical. It is seen from both of them that, although the ages from one to twenty undoubtedly take the lion's share when the frequency of the affection in proportion to the age of the patient is considered (nearly two thirds in Mackenzie's list, full four fifths in my own), yet a *very considerable* fraction remains, in which the enlargement of the glands was still noticeable at the ages from twenty to forty. The simple conclusion to be drawn from these facts is, I hold, that though a medical man may certainly tell the parents of a child suffering from enlarged tonsils that there is a great chance of their spontaneous atrophy after the patient has reached the age of puberty, yet he cannot hold this out as a certainty.

But even if this were possible, it would, in my opinion, by no means settle the matter in favour of the "laissez-aller theory" in cases in which the symptoms are at all of a serious nature. And here we come back again to the root of the whole question, to the consideration of the serious *and lasting consequences* of the presence of very large tonsils! Supposing that a child begins to suffer about the age of eight from the consequences of obstruction to its respiratory, alimentary, and auditory passages, and granting that the obstruction may spontaneously vanish about the age of eighteen—though, as shown above, it often does *not*—can any thoughtful practitioner believe, that ten years of constant interference with some of the most vital functions, and that during the most important period of development, will not leave behind their traces in the

organism of the sufferer? The number of adult patients crowding the waiting-rooms of the aurist for "throat deafness," existing since childhood and gradually getting worse, the configuration of countless faces seen in the streets, the defective articulation and intonation so often met with in people belonging to good society—all tell their own tale and give the best reply to the above question! And again: granting, that in many cases such serious and lasting sequelæ do not follow—are years and years of frequently recurring, often very acute, suffering to be counted as nothing?

As if to convince me again of the justice of my pleading for *timely* interference in cases of this sort, it so happened that the first patient I saw, after the last lines were written, was a typical example of the consequences of the "laissez-aller-theory." She was a pale, unhealthy-looking, poorly-developed girl, æt. 17, who, as long as she could remember, had suffered from her throat. Her history was a mere variation of that given in the beginning of this article. She had come to the out-patient department for "sorethroat." Her face told at once its own tale: it was developed in an excessively lengthy and narrow type, the nose was much too small and the nostrils too narrow in proportion to the rest of the face, the upper lip was too short, the mouth was constantly open, which gave, together with the sleepy expression of the eyes, a stamp of stupidity to the whole face; the upper incisor teeth were projecting and always visible. At the same time she was very deaf, and the deafness was further aggravated during the attacks of sorethroat from which, according to her statements, she very frequently suffered. On examination apart from a slight pharyngeal catarrh it was seen that the tonsils were but slightly enlarged, and there were remnants of adenoid vegetations in the vault of the pharynx. The pharynx proper, however, and the naso-pharyngeal cavity were disproportionately roomy, an almost sure sign, as I have stated elsewhere,[1] that during the period of development there had been obstructing, glandular masses in these two parts. Both tympana were much drawn inwards and Politzerisation did not improve the hearing.

[1] German edition of Morell Mackenzie's 'Diseases of the Throat and Nose,' vol. ii. Berlin: Hirschwald, 1884. Footnote, p. 699.

What then had taken place in this case? Obviously during the period of development of the face there had been glandular masses in the naso-pharyngeal and oro-pharyngeal cavities, preventing the patient from breathing through the nose, condemning that part to a state of inaction and subsequent insufficient development, compelling, on the other hand, the patient to keep her mouth constantly open, and thus leading to excessive length in the formation of the face. Again, there had been interference with the function of the Eustachian tubes (either in the shape of actual obstruction of their pharyngeal openings or of catarrhal affections transmitted from the neighbouring and contiguous pharyngeal mucous membrane) leading to chronic middle ear catarrh and deafness. At the present time, *i.e.* shortly after the age of puberty, the very thing has been accomplished which is held out as a consolation by so many practitioners to the young patient's friends: the obstruction has indeed spontaneously disappeared. But what, may I ask, is in this case the patient's gain by leaving to nature what ought to have been accomplished much earlier by art? Here is the answer: What might, to conclude from the general shape of the features, have been a very pretty, regular face, has been hopelessly disfigured; the general development has evidently greatly suffered under the insufficient oxygenation of the blood during the time it was most important that it should be properly aërated; one of her noblest senses, that of hearing, is severely, and very likely for ever, impaired, and the period of her juvenile years is *one* record of illness and suffering! A very acceptable gain, indeed! And, to think, that all this could, almost certainly, have been prevented!

"But," thus I fancy I hear someone exclaim, as I have heard it, indeed, asked in conversation, and seen it only recently in print, "you do not mean to say that you could have *cured* that girl by attending to what is, after all, only a *symptom* of a general diathesis, viz. the strumous one, which ought to have been treated constitutionally?" My reply to such an exclamation would be that I call it begging the question! To begin with, hypertrophy of the tonsils is, though very frequently, by no means invariably caused by the strumous diathesis. But even in cases in which the enlargement depends upon the

last-named cause one does not recommend removal of the tonsils because one hopes to "cure" the diathesis itself by their extirpation, but because the tonsils, *and they alone, i.e. not* the strumous diathesis as such, are the source of the above-described serious, local sequelæ! Anyone objecting to the removal of enlarged tonsils, which cause serious respiratory, auditory, and other troubles, because such removal does not cure the strumous diathesis, of which they are but an expression, might as well deprecate the removal of a stone from the bladder because such an operation does not cure the lithic diathesis!

But I take up the glove and go further! I say, that apart from the beneficial *local* consequences of the extirpation of greatly enlarged tonsils, there cannot be the slightest doubt that the operation is followed by a most marked improvement in the patient's *general* health! It has already been stated that enlargement of the tonsils is by no means exclusively a result of the strumous diathesis. In cases, then, in which it was originally started by other temporary influences, acute tonsillitis, scarlatina, morbilli, diphtheria, &c., it does not need much elaboration to show that a better aëration of the lungs, and a more thorough mastication of the food, as rendered possible by the removal of the masses obstructing the free passage of air and nourishment, will most probably be followed by an improvement in the patient's general health. But exactly the same argumentation must be admitted also in cases in which the hypertrophy is the result of the strumous diathesis. In such cases the chain of events forms a true vicious circle: the constitutional anomaly leads to hyperplasia of the glands, the mechanical obstruction to the passage of air and food, caused by the enlargement of the glands, interferes with respiration and digestion, the defects in the two latter functions in turn aggravate the constitutional anomaly. It is obvious that if one succeeds under such circumstances in breaking the circle at any point, improvement, or at least arrest, might confidently be looked for in the remaining phenomena. Practical experience shows that this reasoning is more than theoretical; amongst the most pleasing results of the operation in such cases is, as just stated, apart from the disappearance of the local symptoms, the often surprising improve-

ment of the little patient's general health. It goes without saying that, in cases in which the diathetic origin can be clearly traced by the presence of other strumous symptoms (affections of the skin, mucous membranes, cervical and other lymphatic glands, bones, &c.), an appropriate constitutional treatment will have to go hand in hand with the operative interference.

The remarks made in the last paragraph about the "vicious circle" formed in these cases by the chain of symptoms naturally lead us to the consideration of the second question, previously referred to, and very frequently asked, even when the consent to the operation has been given, viz.: "Had the operation not better be postponed a while until the patient has grown a little stronger?" On the face of it this question seems quite reasonable: the little patient's general health is almost always in a rather unsatisfactory state, and it would seem natural enough that before the performance of an operation it should be, if possible, somewhat improved, in order that the shock of the operation might be better borne, and convalescence be more rapid. Such at least is the sentimental reasoning of many parents, and—at least to conclude from a good many volunteered statements—of not a few practitioners. But if it be remembered from the last paragraph, how closely interwoven the symptoms in these cases are, it will at once be seen that such reasoning is absolutely untenable. Why is the child's general health so bad? In some cases no doubt *to some extent* in consequence of the *fundamental* mischief (strumous diathesis), but even in these cases *greatly*, in the others almost *exclusively*, in consequence of the insufficient oxygenation of the blood and the defective mastication and assimilation of the food, which are direct consequences of the presence of the obstructing glands. If, then, this be so, can any improvement be expected, whilst the very causes which produce the deterioration of the general health are allowed to continue their obnoxious action?

My practical experience leads me to answer this question as decidedly in the negative as I should have done upon theoretical grounds. Over and over again the following has happened in my practice: Parents bring me a child in whose case the removal of the tonsils is obviously indicated. In

spite of all explanations, however, they can not make up their mind to have the operation at once performed, and insist on "milder measures" being first tried. In such cases I prescribe all the usual constitutional remedies, iodide and phosphate of iron, cod-liver oil, nutritious diet, climatic changes, sea-bathing, &c., adding that an effect, if any, can be expected only very slowly; that, therefore, a fair and long trial ought to be given to the constitutional treatment, and that the child should be brought to me in a few months' time.

I may sum up my experience of such cases by saying, that in the *majority* of them the parents have not waited for the time appointed, but have brought the child sooner, because they could no longer shut their eyes to the fact, that in spite of all care and attention it got decidedly worse. I cannot, of course, state that it is *invariably* so, because there are cases in which the mere intimation that the child's tonsils ought to be removed so frightens the parents, that they never again come near the practitioner who has given such advice, and because there are others, in which the operation is finally performed though not by the person who originally advised it. But I can honestly assert that in the whole of my experience I do not recollect a single case in which I declared the operation to be urgently required—it will, I trust, be understood that in the whole of this article I speak of such cases *only*—and in which by waiting and postponing it a real gain was obtained.

On the other hand, I state without hesitation that just in the cases in which the child is most debilitated by the hurtful consequences of the mechanical obstruction, the results of the operation are most gratifying so far as the general health is concerned. Over and over again have I heard it stated by the parents that the sickly child, whose sleep had been disturbed for months or years by the difficulty of getting a sufficient amount of air into his lungs, had slept quietly and soundly—the first time for many months—the night after the operation; over and over again have I seen myself how, within a week's time from the operation, the formerly pale cheeks got rosy, the appetite increased, the child, who had been always sleepy, morose, easily fatigued, &c., improved in all these

respects, and the change in general appearance brought about within six weeks from the operation is often simply astounding! There is, however, nothing mysterious about this improvement; it is the simple result of the restitution of the diameter of the food- and air-passages to the normal.

But even if it be assumed that the above arguments set at rest all the apprehensions so far mentioned, still the practitioner will almost certainly have to contend with one other source of anxiety expressed generally in the last of all the questions laid before him by the anxious parents: Will not the enlarged tonsils grow again?

An affirmative reply has, indeed, on the whole, been given to that question only quite recently by the anonymous author of a clinical paper in the 'Medical Times and Gazette,' whose rather strange notions with regard to the whole question of tonsillotomy I mentioned in the beginning of this article. He speaks of the patients, "probably well known to all hospital physicians and surgeons," who have had their tonsils taken out "again and again," "thinks that the simplicity of the tonsillotome carries with it the disadvantage of almost invariably incomplete removal," and for this and other reasons forms a very low opinion of the value of the operation. To this I reply as follows:

Could the fact be really established that after *properly* performed tonsillotomy in a *large* number of cases the glands enlarged again, the performance of the operation might, I admit, justly be objected to. But the weakness of "B's." contentions rests in the premises upon which he forms his conclusions.

In the first place I must ask with Dr. Morell Mackenzie, who has written a very remarkable letter to the editor of the 'Medical Times and Gazette' (published in the number of March the 15th, 1884), in reply to this article: Where has the writer had the opportunity of gaining his experiences about the cases in which the tonsils had grown "again and again" after removal? A glance at the statistics of my department in this and last year's volume will show that—speaking only from hospital practice—I have very unusual opportunities of hearing statements about tonsillar affections. Well, perhaps *once or twice a year* I hear the statement that the tonsils have grown

again after removal; but surely upon a number of cases so small in proportion to the aggregate, nobody could base an argument of any weight against the operation, if its results in the overwhelming majority are successful.

But secondly—and this is in reality much more important than the first point—I must ask, Where is the proof that in these cases the first operation has been *properly* executed, *i.e.* that a *sufficient* piece of the tonsil has been removed?

I ask this very pertinent question, to which the statement of the writer, viz. that the removal by means of the tonsillotome was almost "invariably incomplete," leads with logical necessity, for two reasons: I shall hereafter detail what is in my opinion necessary to make the operation a "complete" one, but would say at once that a thoroughly sufficient operation is by no means identical with "complete removal" of the gland. First of all, however, I must give my own experience as to how tonsillotomy is by no means rarely performed. Timid beginners *often*, as I have seen repeatedly myself, remove a ridiculously small piece of the gland and, without confessing to the insufficiency of their proceeding, desist from further attempts, and leave the patient and his friends under the impression that the operation had been properly performed! (See also Dr. Mackenzie's statements, to the same effect, in his already quoted letter.) But apart from this we come here to what is very likely another piece of what I have called before "tonsillar superstition." To my certain knowledge there is a widespread impression abroad amongst the British profession to the effect that "if one cut only a slice, however small, off a tonsil, the remainder will shrink." I have been asked over and over again whether this is true; quite recently a most eminent surgeon in private conversation with me took the fact simply for granted and made use of it for the sake of an illustration! Well, in reply to this I cannot prove that it is not so, because, as far as I am myself concerned, I have from the time of my earliest operations, endeavoured, to take off so much of the tonsils, that they become at least reduced to the *maximum* of their *normal* size, *i.e.* that they do not project beyond the anterior palatine arch. Thus I have not had the opportunity of getting experience in my own practice as to the truth of

this apparently popular belief. At the same time I must say that I should be much surprised if it were founded on fact! I do not know of any analogous fact, *i.e.* of the shrinking of any other gland *in toto* after the removal of a most insignificant slice of it,[1] and am unable to understand the *rationale* of such an atrophy. Nor do I find any statement corroborating this belief in the latest and best text-books on throat diseases. I must therefore conclude that if such an atrophy has really taken place in some cases, it must have been *independently* of the operation, whilst on the other hand I very *strongly* suspect that in cases in which a renewed enlargement of the glands has taken place after removal, the first operation must have been—purposely or unintentionally —an insufficient one. My own experience would strongly corroborate this suspicion: In many hundred cases of tonsillotomy in my own practice I have *but once* seen a *considerable* re-enlargement take place, and in this case I am quite conscious that the operation in the first instance was but insufficiently performed owing to the struggles of the child and to the disinclination of the mother to let me improve upon my first attempt. That there might occur in a few cases a "feeble hypertrophy of the stumps" of the removed glands as stated by "B." I am not prepared to deny, but obviously this occurrence could only be quoted as an argument against the operation, if it led again to the same consequences. So long, however, as the "feebly hypertrophied stumps" are not productive of the same mischief for which their predecessors were "executed" as "B." has it, I cannot admit that their innocent existence proves anything against the value of the operation.

My own experience, then, in these questions again fully tallying with Dr. Mackenzie's (see his often-quoted letter) I am inclined to think as he does, viz. that (1) the recurrence of considerable tonsillar enlargement is by no means so frequent as "B." would fain make us believe; and that (2), if occurring, it is almost always due to an insufficient removal in the first

[1] The atrophy of the lateral lobes of the thyroid gland after the removal of the isthmus, repeatedly observed of late, is no parallel, because in the case of the removal of the isthmus the whole blood supply to the gland becomes considerably altered.

instance, whether this has been intentional or not. That faults of this kind ought not to discredit an operation which is useful, if properly performed, but stimulate the operator to improve his *technique*, seems to my mind obvious.

There remains but one point to be considered in connection with the question of objections *a principio* to the operation, and this is a point, of the existence of which I have only become aware, I must confess, from the perusal of the clinical paper repeatedly referred to. In it I find the following statement:—"But it is not, until they (viz. the tonsils) come under close observation, that the discovery can be made, that these overgrown glands are liable to frequent fluctuation in their size, and hence in the symptoms which they produce. Intending operators have frequently been astonished, on appointing a convenient day for tonsillotomy, to find that the urgent need for immediate removal, which they have been impressing on the minds of parents and friends, has, in the meantime, become considerably lessened by the independent conduct of the tonsils themselves." . . .

This statement and what follows, is, it appears to me, under any circumstances not quite so clear as might be desired. Does the author speak of *acute* attacks, such as I mentioned in the beginning of this paper, as so often supervening in the course of chronic enlargement of the tonsils, and leading to a temporary additional inflammatory enlargement, which subsides with the subsidence of the other inflammatory symptoms? If so, I can but express my entire agreement with Dr. Mackenzie, when he says that, if repeated attacks of painful inflammation can be prevented by a single operation, there appears to him the strongest reason for its performance. Here I wish to add, that a *careful* practitioner will certainly not bring himself into the position humorously depicted by "B." viz. of appointing a day for the performance of tonsillotomy, and then finding that there was nothing to operate upon! He will not at once impress on the minds of parents and friends the "urgent need for immediate removal," when he sees the patient for the first time, just when the latter suffers from an acute attack of tonsillitis, but he will tell them that he must see the patient again under what are, for the latter, normal conditions, for only then, *i.e.* when he sees the

chronic enlargement *without* the inflammatory addition, can he form an opinion as to the advisability and necessity of a cutting operation.

If, however, as might be understood from the following, "B." speaks of a "*chronic* and fluctuating" enlargement, a condition, which he considers as diathetic, I must say, that such cases are practically unknown to me, and, although quite open to conviction I must be permitted to doubt the frequency of their occurrence. So far as my own experience is concerned, at any rate, I do not remember having ever seen conditions such as those described by "B.," and certainly I have not a single time been in the position of finding on the day appointed for tonsillotomy, that the glands had in the meantime undergone any perceptible diminution. And what is more, I make bold to say, that very likely not mine, but "B.'s" experience will be considered exceptional by all those who have had the opportunity of gaining a large experience of their own.

I believe, that the points, touched upon in the above discussion, are those—apart from the dangers of the operative act itself, of which more further on—which are most commonly and frequently raised in objection to the operation. As already mentioned in the beginning of this article, I do not venture to assert that I have entirely exhausted the list; for, indeed, nothing seems in this question too absurd to be brought forward, if it only supports the objections against this beneficial operation; but I hope, that I have adduced sufficient evidence to show, that even the apparently more reasonable of these objections are not tenable in the face of well-ascertained facts.

Having thus—as I hope at least—disposed of the obstacles, which superstition and a mistaken sentimentality have thrown in the way of looking at this question from a sober and scientific point of view, I may be very brief in describing what I believe to be the proper indications for tonsillotomy, for almost all the points illustrating the validity of these indications, have already been discussed in the previous part of this paper.

I recommend, that the tonsils should be reduced in size under the following circumstances:

1. If they interfere with respiration during waking or during sleep and lead to insufficient oxygenation of the blood.
2. If they lead to changes in the character of the voice and to defective articulation.
3. If they lead to defective development of the face and chest.
4. If the chronic enlargement, though not very considerable, be attended by frequent attacks of inflammation of the tonsils themselves, by tumefaction of the cervical lymphatic glands or by catarrhal conditions of the neighbouring mucous membranes, notably of the Eustachian tubes.

The common characteristics of these indications are, it will be observed, that all of them are conditional, not absolute. In other words, I recommend a surgical interference with enlarged tonsils only when they cause any of the serious symptoms above enumerated, and not merely on account of the enlargement *per se*.

It has been very well pointed out, that the term "large tonsils" is one that can only be used relatively. Comparatively large tonsils in a roomy pharynx are no doubt much less mischievous *per se*, than much smaller ones in a naturally very narrow throat. Supposing that the former do not interfere with any of the functions of the part nor lead to frequent inflammations, &c., there is in my opinion—especially in consideration of the undoubted fact that the glands show in the majority of cases a spontaneous tendency to atrophy at a certain age—not the slightest reason to interfere with them. It is by no means rare for children to be brought to me, simply because it has been accidentally discovered, that "their tonsils are large." If in such cases I cannot satisfy myself, that any of the graver consequences, mentioned in my list of indications, are present, I never interfere with the glands in any way—apart, of course, from instituting constitutional treatment, if I find that they owe their enlargement to a general dyscrasia.

It is only when I find, that any or several of the symptoms mentioned in my list are present, that I strongly insist on the undesirability of either leaving matters alone or losing precious

time by having recourse to inefficient measures. I wish to emphasize the distinction thus made, lest it should be inferred from the tone of my foregoing remarks, that I am a fanatical advocate of surgical interference as soon as an enlargement of the glands is discovered. Nothing, indeed, could be more alien to my intentions. My reason for speaking in strong terms against all the forms of superstition connected with this subject, is that I consider it my duty to do so. Of late over and over again the cry has been raised, that specialism ought to be made more useful to general medicine. I have always, to the best of my ability, tried to work in that direction, but the present question appears to me one in which especially good service can be done by anyone having enjoyed special facilities for becoming acquainted with the present state of public opinion in this matter. General physicians and surgeons no doubt hear the same questions raised and have to contend with the same objections as the specialist, but it is in the nature of things, that they can hardly form so good an idea about the predominance of these forms of superstition as the latter. Nor, on the other hand, do they probably see so many instances, in which the sad "too late" must be proclaimed, as the specialist! It is the duty then, I hold, of the latter, to speak out strongly when after a good many years of observation he has formed a strong opinion on the subject. At the same time, however, I would once more protest, that strong condemnation of inertia is not identical with indiscriminate activity!

And here is the place for making the only necessary restriction concerning the general validity of the indications given above, a restriction, however, of the greatest possible importance. I refer to the possibility of a *simultaneous existence of hypertrophic tonsils and adenoid vegetations.*

At this juncture a little departure from my main object is unavoidable. This article having already transgressed the limits, which I originally intended giving it, I cannot include in it the allied subject of adenoid vegetations, and must postpone a detailed consideration concerning these growths to my next year's report. But at the same time the subject, it will presently be seen, cannot be wholly passed over in silence in the present paper. Let me say—what I have reason to believe,

is not so generally known as it ought to be—that the name of "adenoid vegetations" has been proposed by W. Meyer, of Copenhagen, fourteen years ago, for glandular growths in the naso-pharyngeal cavity, representing hyperplastic changes in the numerous solitary follicles situated in the vault of the pharynx, and in their agglomeration known as "Luschka's tonsil." That such a hyperplasia, if at all considerable, gives rise to a chain of symptoms very similar in nature to those sketched in the beginning of this article as results of tonsillar hypertrophy ought to be known to every practitioner. Thus, we find in cases of adenoid vegetations, just as in cases of considerable tonsillar enlargement, impossibility of nose-breathing, snoring at night and broken sleep, characteristic deformity of the face and external nose, defective pronunciation, insufficient oxygenation of the blood, often general cachexia, and in excessive cases pigeon-breast. Again, there is the same tendency to catarrh of the neighbouring mucous membranes as in the case of enlarged tonsils, but here we come to a slight difference: to the pharyngeal and Eustachian catarrh, observed in connection with the latter, must be added—naturally enough from the locality of the hypertrophic adenoid tissue—frequent nasal catarrh. Finally, it is to be observed that whilst in cases of enlargement of the tonsils the Eustachian deafness can only be produced by extension of pharyngeal congestion to the mucous lining of the tube, but not by actual pressure upon its pharyngeal opening, in the case of adenoid vegetations, the latter, purely mechanical, form of obstruction is a comparatively frequent cause of the ear troubles present in such cases.

The foregoing, necessarily very short, description of the symptoms caused by adenoid vegetations, will suffice, I trust, to show that they are almost identical with those produced by large tonsils. (It need not be further developed, that, just as in the case of the latter and quite depending upon the question of their localisation, in one case the respiratory, in another the aural, symptoms might be more marked.)

Now these adenoid vegetations are met with *very frequently* in this country, much more frequently indeed than is generally supposed,[1] and again, they are—according to my own experi-

[1] During the last two years alone (1882 and 1883) I have myself seen more

ence—*relatively frequently found in conjunction with enlarged tonsils.*

The last-named important fact brings us back to our subject proper. For if there be two factors simultaneously at work in producing one and the same chain of symptoms it might be easy in some cases but will be difficult in others, and even impossible in a third category, to assign the true amount of importance to each if they are not quite equally developed.

Thus, we might have, apart from the unmistakable cases,

I. Much enlarged II. Rather large III. Somewhat enlarged	tonsils with	(1) excessive (2) much developed (3) somewhat developed	adenoid vegetations.

and all possible combinations between these conditions will be met with.

It is this question to which I particularly wish to draw attention, because it is a fertile source of want of success, disappointment, difficulty, and annoyance. Over and over again the following has happened to me: A practitioner sends me a child with a note to the effect that the child is suffering from obstruction to his breathing and deafness, and that he has prepared the parents for the necessity of the removal of the tonsils, which operation he would request me to perform. On examination it is found that the tonsils are undoubtedly a little enlarged, but certainly not enough to explain the symptoms complained of; an examination of the naso-pharyngeal cavity is made, and this is found to be entirely obstructed by adenoid vegetations. Nothing can be more unenviable than the position of the operator under these circumstances; it is, of course, his plain duty to tell the parents that though the existence of the obstruction has been rightly diagnosed at home, yet its locality is other than was supposed and that another operation, almost always requiring *several* sittings, is necessary. However diplomatically and in the spirit of a true colleague he may proceed, he sees the disappointment on the face of the father, he cannot help feeling that his explanation has somewhat damaged the scientific *prestige* of the general adviser of the family, and he runs the risk of offending the

than 60 cases in private practice and at St. Thomas's Hospital. (See the statistics.)

latter. But could he act otherwise? I leave my readers to answer that question for themselves.

No positive rules can, of course, be laid down, as to the handling of these, I repeat, frequent cases. I trust the time is not distant, when every practitioner will be able to diagnose the existence of adenoid vegetations himself, for, indeed, digital exploration of the naso-pharyngeal cavity will in most cases suffice for this purpose.[1] In the meantime, however, I would fain recommend reserve with regard to the explanation of the measures necessary for the removal of the obstruction. Even in cases, in which the tonsillar hypertrophy is so excessive, that it apparently fully explains all the symptoms present, it is wiser not to commit oneself to the promise, that the removal of the enlarged glands will be followed by speedy remission of all the phenomena, unless one has convinced oneself by examination, that no adenoid vegetations are simultaneously present; for, speaking from personal experience, I remember several cases, in which both the naso-pharyngeal and the pharyngo-oral obstructions were excessive. Broadly speaking the best *modus operandi* will be this:—(*a*) If the tonsils are excessively large, and the well-known symptoms present, the glands ought to be removed under all circumstances, and the removal of vegetations, if present, and if leading in their turn to more serious symptoms, ought to be undertaken later on. (*b*) If the tonsils are not very large, but frequently inflamed, and if there be at the same time largely developed vegetations, leading to obstruction of the respiratory and auditory passages, the tonsils had best be removed *first*, in order to avoid the risk of the operations for the removal of the vegetations having to be frequently interrupted on account of acute tonsillitis setting in. (*c*) If the tonsils are but little enlarged, and if there are at the same time largely developed vegetations, evidently causing the symptoms present, *the tonsils had best be altogether left alone*, and the vegetations alone attended to. In such cases the tonsillar enlargement is generally secondary to the naso-pharyngeal disease, and does not show any tendency to increase after the cure of the latter.

But all this advice is, I repeat, only general, and every

[1] I must refer, with regard to this question, to the numerous works and papers on adenoid vegetations.

individual case, in which both sets of glandular enlargement are present, will have to stand on its own merits. The point I have here at heart is only this: to emphasize that the indications I have ventured to lay down, only in reality exist, when it has been ascertained, that the symptoms mentioned, actually depend upon tonsillar enlargement *alone*, and not upon concomitant affections the foremost of which are adenoid vegetations.

Supposing now it had been elicited, that tonsillar enlargement alone was the cause of serious symptoms and consequences, supposing further, that internal remedies and attention to general hygiene had been shown to be incapable of causing a reduction in the size of the glands, or that concluding from former experiences one had been able at once to assert that nothing was to be expected from making a trial of such measures, and that postponing the unavoidable surgical interference only meant losing precious time—in such a case the only two remaining questions would be: (1) which method of operation ought to be chosen; (2) how much of the gland ought to be removed?

With regard to the first question I must confess, that my views have undergone some modification within the course of the last two years. Two years ago I should have simply made *one* distinction, viz. according to whether the main diameter of the enlargement was the transverse, or whether it was the antero-posterior one, and I should have advised in the first eventuality which is much more frequently met with, to proceed by *cutting* operation, in the second one, which is by far the rarer, by *galvano-caustic* applications. At that time I thought, that the main danger of producing hæmorrhage consisted in the attempt to *enucleate* by a half-ovoid cut a deep-lying tonsil, enlarged mainly in the antero-posterior direction, and in wounding during that attempt either the ascending pharyngeal or the tonsillar artery or one of their larger branches.

In such cases it is, in my opinion, of exceedingly little use to cut off either by bistouri or tonsillotome the often very small part which, though the tonsil on the whole is very considerably enlarged, alone projects beyond the palatine arch into the interior of the pharynx (see p. 142), and a

more extensive destruction of the hypertrophic glandular tissue is indispensable. I should therefore have given preference in these fortunately not very frequent cases to the safer, though undoubtedly more tedious, galvano-caustic method, whilst I should have left the great majority of hypertrophic tonsils, in which the enlargement concerns the diameter from without inwards, either to the bistouri or the tonsillotome. Which of these two ought to be used, had, I think, best be left to the proclivities of the individual operator. Unlike the question of the best method of removing nasal polypi (in which after personal experience of different methods I unhesitatingly call the use of the galvano-caustic snare the *best* method at present at our disposal), I have no doubt, that tonsils can be *equally* well removed by very different methods. The choice of the latter generally depends, I believe, upon the training of the operator, while *in statu pupillari*. Personally I almost always use Physick's tonsillotome, as modified by Morell Mackenzie. I have found it efficient in all cases which I considered suitable for cutting operations, and I personally believe that if it were better known on the Continent, it would supersede Fahnestock's guillotine. I have formed this opinion from the fact, that almost all foreign surgeons and laryngologists known to me, who have seen its use whilst staying in England, seemed to like it very much and inquired for the address of the instrument-maker. However that may be, I repeat, I am quite convinced, that the tonsils can be equally well removed by the knife or by other tonsillotomes.

To return, however, to the main question: I still believe that the enucleation of a tonsil, mainly enlarged in the antero-posterior diameter, by an ovoid cut from its recess is dangerous, and that it ought therefore to be a general rule, not to perform tonsillotomy at all by means of the knife in cases, in which one *could* not, by means of the guillotine, remove a sufficiently large piece. But I have since learned, that the danger of hæmorrhage is not limited to this class of cases. Already in my last report I have communicated a case (see p. 85 of the 'St. Thomas's Hospital Reports' for 1882), in which, for the first time in an experience of several hundred cases of tonsillotomy, I met with serious hæmorrhage. Yet

in this case the enlargement mainly concerned the transverse diameter, the inner surfaces of the tonsils almost touched each other, and there was not the slightest difficulty in removing the greater portions of the obstructing glands. The hæmorrhage in this case was distinctly arterial, and although I could not say positively what was its exact *fons et origo*, I considered it most probably due to a lesion of an abnormally large branch of the tonsillar artery. The bleeding, after the failure of many other hæmostatics, was finally arrested by direct digital pressure.

Since then I have had, I am sorry to report, another case of serious tonsillar hæmorrhage. The patient was a woman, æt. 23. Her tonsils were so enormously enlarged that they completely touched each other in the middle line of the pharynx. She was a victim to almost all the symptoms enumerated in my list of indications for tonsillotomy, and all these symptoms had been in existence ever since she could remember. The removal of her tonsils was therefore plainly indicated. The operation, which was performed by means of Mackenzie's tonsillotome, did not offer the slightest difficulty, and two enormous pieces were removed, though no attempt was made to enucleate the whole of the glands. The bleeding, however, though at first by no means excessive, would not stop. On examination it was seen, that blood continually oozed from the whole cut surface on the right side. This was therefore a case of parenchymatous bleeding. All sorts of hæmostatics, sucking of ice, sipping of alum, &c., even the local use of tannic and gallic acid, so much praised by Dr. Mackenzie,[1] completely failed. Digital pressure only made matters worse, as it did not control the hæmorrhage and in addition induced sickness. Finally it was decided to leave the bleeding a little to itself, and to keep the patient under constant observation in the hope that, when the circulation was much lowered, the parenchymatous oozing would spontaneously cease. This hope turned out to be justified; the patient having been admitted as an in-patient, put to bed and kept absolutely quiet, the bleeding finally (*i.e.* about two hours and a half after the performance of the operation) spontaneously ceased, without the patient having ever lost

[1] 'Diseases of the Throat and Nose,' vol. i, p. 72. Churchill, 1880.

consciousness, and it did not occur again. The patient, however had lost a very large quantity of blood, was very considerably weakened, and convalescence was rather slow. It could not be made out that in this case there had been previously a tendency to hæmophilia.

Although this case differs from my other in the hæmorrhage being parenchymatous, whilst it was arterial in the former, yet there are several points of similarity in them. Firstly in both cases diminution of the enormous glands was obviously and urgently required; secondly both belonged to the class of cases, apparently most suitable for removal by means of the tonsillotome; thirdly in neither case was, to the best of my knowledge, a fault committed, so far as the operative act itself was concerned. I should certainly not hesitate to state it frankly, for the benefit of future operators, if I had taken away too much of the gland, if I had injured the faucial pillar, &c., &c., for I firmly believe, that one learns much more from freely confessed mistakes, than from reports of successful cases. But certainly so far as I know, I in neither case departed from the plan, which has in hundreds of cases, before and since these accidents occurred, been successful in my hands.

It seems therefore more likely, that in both these cases there were vascular changes in the glands, the existence of which could not be made out before the operation. Now such changes—unless there be a distinct tendency to hæmophilia—are much more likely to be present in *adults*, than in children, and in accordance with this theoretical reasoning by far the greater number of dangerous hæmorrhages after tonsillotomy, which have of late been reported, occurred in adults. My own experience seems to corroborate this further: my first patient, in whom hæmorrhage occurred, was forty-six, my second twenty-three years old. Taken altogether, however, the number of these cases of hæmorrhage in proportion to the total number of cases of tonsillotomy in adults, in which no hæmorrhage occurred, is too small, I believe, to lay down, as some authors will have it, that it is a contra-indication to tonsillotomy, if the patient has passed his twentieth year. At the same time after my experience, communicated above, I now consider it my duty, to tell patients, who have passed that age,

whose cases imperatively demand diminution of the size of the tonsils, and in whom removal by cutting operation would seem to be indicated by the shape of the enlarged glands, that there is undoubtedly a risk, however small, of hæmorrhage occurring, and that the safer though more tedious way of getting rid of the offending masses consists in their destruction by means of the galvano-cautery. I have employed the latter method now in a considerable number of cases and am very satisfied with the results, but I must own it is tedious. In much developed cases six, eight, even ten sittings may be necessary. The pain during and after the operation, however, is so trifling, that the method is perfectly available, even in small children. I have not tried removal by means of the galvano-caustic snare, as recommended by Dr. Moritz Schmidt of Frankfort-on-the-Main, and must confess, that, great as my proclivity is for that method, I am afraid it would not act as an absolutely safe hæmostatic, if there were a tendency to parenchymatous bleeding, or if an abnormally enlarged arterial branch were cut across.

My present position, then, with regard to the whole question, which method ought to be chosen, is this :

1. If the patient be under twenty, and the enlargement mainly involves the transverse diameter, so that the tonsil or tonsils project a good deal beyond the arch of the palate, I avail myself of a cutting operation.

2. If the local conditions be the same, but the patient be above twenty, I give the patient the option between the cutting and the galvano-caustic operation, explaining to him fully the advantages, disadvantages and risks of both methods.

3. If the tonsils, however large, and however productive of serious consequences, are entirely concealed behind, or only little projecting beyond, the palatinal arches, I proceed by galvano-caustic applications, whatever the age of the patient may be.

The only question remaining is : how much of the enlarged gland ought to be removed ?

From several remarks in the foregoing article it will have been seen, that I consider total enucleation of the gland not only dangerous, but also generally superfluous. The tonsils projecting under normal conditions nearly or quite up to,

or even a little beyond, the palatinal arches, it ought to be the aim of the operator to reduce them in cases of hyperplasia to their *normal* size. With a view, however, of a slight increase in size possibly taking place again after the operation, it will be desirable, though not absolutely necessary, to push the tonsil a little inwards by pressure upon it from without just underneath the angle of the jaw, at the moment of the performance of the operation. By this means—whether the knife or the tonsillotome be used—it will be possible, without injuring the anterior arch of the palate and without coming into dangerous proximity to the large vessels running close to the base of the tonsil, to remove not only the portion projecting beyond the arches, but also a part of that portion of the gland, which lies *between* the arches. In the overwhelming majority of cases this will be quite sufficient. Only in cases, in which even after the removal of the larger part of the gland a tendency to inflammatory attacks in the stump remains, might it become necessary to treat the latter by means of the galvano-cautery. But such cases are very rare exceptions indeed.

How much ought to be done in the cases which from the very beginning are to be treated by means of the galvano-cautery, cannot of course be dogmatically stated. Each case will have to be treated according to its special indications. But these cases again are, comparatively speaking, rare, and I wish to say in conclusion that in writing this article I have not so much intended to discuss *rare* contingencies, as to be useful to that *very large* number of *young* patients, who by a simple operation could be freed from an affection, spoiling their youthful years, and frequently leaving traces ineffaceable for life, yet who are, as matters now stand, but too often systematically neglected, thanks to old and unjustifiable prejudice.

If these lines should contribute towards removing this prejudice I would feel amply rewarded.

5. *Isolated Œdema of Vocal Cords.*

F. M—, hawker, æt. 20, applied to the throat department in June, 1883, on account of complete loss of voice and pain

in the throat. I had seen this patient previously at the Newington Butts Outpost of the Throat Hospital, where he had applied for a very acute congestion of the larynx, contracted apparently by excessive use of the vocal organ. I had then warned him, that he would have to give complete rest to his voice for a little while, if he wished to recover it speedily. He had never come again after this advice. Now he confessed to having entirely disregarded my warning and to having gone on hawking, in spite of increasing difficulty and pain in his throat, until his voice had failed him altogether. On laryngoscopic examination both vocal cords were seen to be changed into two bright red, semi-transparent, half cylindrical rolls, the movements of which were not impaired, whilst the rest of the larynx was perfectly normal in appearance. Rest of the parts, soothing inhalations, and astringent applications, when the œdema had subsided and congestion only remained behind, soon effected a cure.

The case is separately mentioned only, because it is very rare to find *isolated* œdema of the vocal cords, these parts, on the contrary, being generally the last of all constituents of the larynx, to suffer from œdematous infiltration.[1] The cause of the unusual localisation in this case was, no doubt, the persistent abuse and constant irritation of the part principally exercised in the act of phonation.

6. *Submucous Abscess of Larynx.*

Ch. D—, warehouseman, æt. 17, came to the throat department on January the 19th, 1883, with the following history: —He awoke on the 15th with a little sorethroat. On the following day he felt worse, his voice gave way, and he had slight dysphagia. He consulted a medical man and was ordered a seidlitz powder. Getting worse in spite of this and obtaining no relief from the application of a linseed poultice, he came to the hospital. On examination of the larynx slight œdema of the left arytænoid cartilage and left arytæno-

[1] See Semon, "On some Rare Manifestations of Syphilis in the Larynx and Trachea," 'Lancet,' vol. i, 1882, April 1.

epiglottidean fold with complete immobility of the whole left half of the larynx in the position of phonation were seen. The voice was weak, but not hoarse. Pressure upon the posterior part of the left wing of the thyroid cartilage was distinctly painful. Ordered Mist. Salina, Vap. Benzoin. On the following day the state of things was the same as that seen on the previous day, with the addition that the immovable left cord, especially in its posterior part, was now in a state of acute congestion, and that corresponding to its external insertion into the left arytænoid cartilage there was a small, but well-defined accumulation of pus. Ordered hot linseed poultice to the left side of the neck.

On the 22nd the abscess burst spontaneously, and a small quantity of pus was coughed up. The pain and dysphagia diminished, the voice got stronger.

On January the 26th a distinct improvement in the mobility of the left cord was noticed, and this continued whilst the œdema gradually diminished. Local applications of chloride of zinc (gr. xv—ʒj) were now made daily, and in the course of a few days the parts had returned to their normal state.

The case is put on record on account of the comparative rarity of simple (*i.e.* non-perichondritic) abscesses of the larynx.

7. *A Case of Laryngorrhœa.*

I have purposely chosen an uncompromising title, characterising the main symptom only, and not expressing any definite opinion about the nature of the following very curious case, because (*a*) it is still a rather obscure one; (*b*) the opinions at the time when the case was observed were somewhat divided; (*c*) another explanation, not thought of at that time, only occurred to me whilst preparing the report of the case for my present contribution.

I will begin by giving the history in full, and premise only that I had the opportunity of following up the case thanks to the kindness of my colleague, Dr. Harley, under whom the patient had been admitted, before I saw her.

Dr. Harley having kindly permitted me to append notes of my own to the patient's bed-paper, whilst she was under his care, I propose taking the responsibility for them by affixing my initials (F. S.) to each of them:

M. H—, æt. 65, single, was admitted into Christian Ward under Dr. Harley on September the 27th, 1883. Nothing particular in family history. She had the usual diseases of childhood. When sixteen years old began to be rather subject to cold; more decided delicacy of chest showed itself at twenty-five years of age; she used to spit up blood, and was in 1855 for three months in the Brompton Hospital. After the change of life she began to get stouter and much stronger than she had been for many years. Four years ago a very severe attack of epistaxis brought her under medical treatment, and a slight attack of the same affection occurred this June.

Present illness.—After tea on the 26th September she felt very poorly, and told her landlady she should go to bed. She had eaten nothing since dinner. Some wine and biscuits were got for her, when she found she could not swallow. It was also noticed she fell towards one side whilst sitting in her chair. A medical man was called in, who ordered inhalation of steam and linseed poultices to the neck. Next morning, the 27th, he recommended her to be brought to the hospital, which was accordingly done in the forenoon.

On admission.—Well-nourished woman. Complains of inability to swallow, loss of voice, and loss of power in left side.

Complete aphonia. Speaks in a whisper. Gurgling sounds in throat during breathing, and constant expectoration of greenish, frothy, semi-purulent fluid.

Unable to sit up without supporting herself with arm. Falls over to left side. Apparently no loss of power in left arm. Stands well, but tends to fall over to left side.

Left angle of mouth rather lower than right. No definite facial paralysis. Tongue protruded straight. Divergent strabismus. Squint of right eye said to have been present since childhood.

Soft palate higher on left, than on right side. Drawn more to right side during movements. Uvula in centre.

Laryngoscopic examination.— Epiglottis and tissues in neighbourhood of arytænoid cartilages much congested.

Glottis obscured by purulent fluid, which wells up from larynx apparently. Right arytænoid cartilage appears to be much more swollen than left, bulging to the left and also backwards. Cords, when seen, move well.

Externally: Larynx seems thickened (?). Some slight tenderness over left side of larynx.

Chest.—Lungs resonant throughout. Creaking rhonchi occasionally all over. Below left clavicle anteriorly fine crepitation.

Heart.—Normal. Pulse 96.

Abdomen.—Normal.

Tongue clean. Unable to pass urine. Drawn off with catheter. Bowels open with enema.

Urine.—Clear, faintly acid, sp. gr. 1022. Trace of albumen. No casts detected.

Temperature.—Normal.

Ordered four leeches to neck, ice-bag to neck, steam-kettle, enema simplex, nutrient enemata (beef tea, milk, egg, brandy) 4tis horis.

On the 28th I was requested to see her. My notes of this day say:—"*Great* congestion of arytænoid cartilages, ary-epiglottic folds and ventricular bands, *but without swelling* of these parts. Vocal cords healthy in appearance, but defective in adduction. Thin purulent fluid wells up constantly (where from cannot be ascertained) and covering the whole larynx obscures the view. Abscess of the larynx (?) Perichondritis laryngea (?)—F. S."

A cataplasma lini was applied to the neck on the 28th.

29th.—A little better.

30th.—"Discoloured spots on right ventricular band and right vocal cord after free expectoration. Otherwise no change. Expectoration very offensive.—F. S."

October 1st.—Has no power over left leg, cannot stand alone. Swallowed a little milk this morning. Expectoration is less in quantity. Numbness and loss of sensation down right side.

2nd.—Is able to swallow this morning, but with some pain. Took one quart of fluid in last twenty-four hours. Still chokes a little after swallowing, but not nearly so much as on admission. Expectorated some dark-coloured blood with

sputum this morning. Occasionally creaking rhonchi over right lung anteriorly. Fine crepitation over both bases.

3rd.—Lemonade, milk.

4th.—Has not spit up any blood yesterday or to-day. Throat feels clearer, not so much phlegm. Bread and milk and enemata. Poultices discontinued.

5th.—Patient can swallow with a little less difficulty; less expectoration. "With the exception of general congestion and somewhat defective adduction of the cords nothing abnormal to be noted in the larynx.—F. S."

℞ Spir. Ammon. comp., ʒss;
Dec. Cinchon., ʒj, t. d. s.

8th.—Much less expectoration.

9th.—The patient's voice is improved.

13th.—Fine crepitation at bases of both lungs posteriorly and occasionally rhonchus still.

14th.—To-day there is some return to natural voice sustained by effort. "There appears to be somewhat diminished mobility of the left vocal cord on attempted phonation. The right compensates by crossing the median line. Oblique position of the glottis. Tenderness on pressure on left side of larynx.—F. S."

16th.—"Observation of the 14th confirmed.—F. S." Patient complains of sore feeling over left side of face and head. There is some dropping of the left eyelid. Left pupil not quite so dilated as right.

℞ Mist. Chalybeat., ʒj;
Liq. Strychniæ, ♏iv, t. d. s.

Steam kettle discontinued.

17th.—Patient still feels the same difficulty in swallowing any solid food. Got up for a short time, but was much fatigued.

21st.—"Left vocal cord moves much better to-day, but there is again very great congestion of both cords.—F. S." This was the last time I saw the patient. On the 24th of October I was suddenly called away to the Continent on a sad errand, and when I returned she had left the hospital. In her notes I find the following additional remarks:

22nd.—Patient still complains of difficulty in swallowing both food and medicine.

℞ Liq. Strychniæ, ♏iv;
Decoct. Cinchon., ℥j, t. d. s.

25th.—Complains of want of power in walking on both sides Ptosis of left eyelid diminished.

Nov. 3rd.—Patient discharged from the hospital. Still some difficulty in swallowing, but voice much improved. She can now manage to walk across the room without assistance.

Thus ended this very remarkable case. The questions naturally arise : Were all the different symptoms observed, due to one and the same cause ? If not, how is their simultaneous appearance to be explained ? And if they had no causal relation, what was the laryngorrhœa due to ?

It will be better to begin with the consideration of the last-named point. Dr. Harley, to whom I have here to express my thanks for permitting me to make use of the case, inclined to the opinion, that the discharge represented a *true* laryngorrhœa, *i.e.* an increase in quantity and change in quality of the secretion of a common laryngeal inflammation. To this I can only reply that not only have I never seen such secretory changes occur in the large number of cases of simple laryngeal inflammation which I have had the opportunity of observing, but that so far as my literary knowledge goes, such secretory changes have never been described before in cases of simple inflammation of the larynx.

From the remarks appended to my first note it will appear what were my own first ideas about the case. I thought it would turn out to be an instance of either submucous abscess of the larynx, which had already spontaneously burst before I saw the patient, and was then evacuating its contents into the laryngeal cavity, or an example of perichondritis of one or more of the laryngeal cartilages. This would certainly have explained the quantity of the discharge, its fœtor in the later stages, and even the dysphagia. But three circumstances remain very puzzling if either of these pathological processes were at the root of the phenomena, viz.—1, the complete absence of febrile disturbance ; 2, the sudden and simultaneous

onset of both discharge and dysphagia; 3, the complete absence of any swelling in the interior of the larynx.

These considerations led me later on to suspect that there might have been a *chronic* process of suppuration in some gland, situated between œsophagus and air passages, leading to pressure upon the former and to perforation of the latter.

This would have explained in its turn the absence of an intra-laryngeal swelling, the sudden onset of the laryngeal discharge, and the absence of febrile disturbance; but one thing would still remain quite unexplained, viz. the *simultaneous* onset of the laryngeal and of the general paralytic symptoms, and at the same time the difficulty of explaining the *simultaneous* occurrence of *dysphagia* and laryngeal *discharge* would be somewhat increased. Common sense would lead one to anticipate that if there had been a "stenosis by compression" of the gullet, there should have *first* been dysphagia, and that if the compressing tumefaction had found an outlet into the air passages, at the same moment the difficulty of swallowing should have *diminished pari passu* with the quantity of matter evacuated into the larynx or trachea.

I may say at once, that the last-named point, viz. the almost simultaneous occurrence of the copious discharge with nearly complete aphagia, remains a mystery to me up to the present moment, unless it be surmised, that the aphagia was also of a paralytic nature. At the same time, leaving this question aside, there is the other, equally puzzling one: Is the simultaneous occurrence of both, the paralytic and the laryngeal and œsophageal symptoms, to be looked upon as a mere coincidence?

I must say, that I do not much believe in coincidences. Riper experience generally shows, that what had been considered a coincidence, in reality depended upon *causal* relation. I cannot help thinking, that some causal relation must have been present also in this case, although I do not up to the present quite see its *modus operandi*.

Whilst looking through the notes of the case it occurred to me, that a more complete explanation of the case would present itself, if it were assumed, that the abscess, which I suppose to have been at the root of the laryngeal symptoms, had not been an idiopathic one, but had been a periœsopha-

geal abscess, due to *disease of the dorsal vertebræ*. A hypothesis of this character would to some extent explain the laryngeal and œsophageal symptoms, as well as the loss of power in the left lower extremity, and even the later loss of sensation on the *right* side. The evacuation of the abscess with subsequent diminution of pressure upon the spinal cord would also explain the improvement that took place. That the dysphagia to some extent persisted might be explained by supposing that cicatricial contraction of the walls of the abscess cavity, involving the wall of the œsophagus, had taken place after the evacuation of the pus, and had produced permanent œsophageal stricture. Still the facial paralysis, and the ptosis on the left side, remain very difficult to explain inasmuch as there was no evidence at all of implication of the cervical part of the spine. Again, if the vertebral lesion, the existence of which I suspect, was so extensive, as would appear from the symptoms, it seems difficult to understand that recovery should have taken place. I therefore bring forward this explanation with all possible reserve, and much regret that it did not occur to me at the time, and that no examination of the spine was made. The case seemed, however, so extraordinary and unusual, that deficient as my attempt at explanation might be, I thought it a duty to put it on record.

8. *Benign Neoplasms of the Larynx.*

Case 1. *Multiple papillomata.*—E. T—, married, æt. 33. Commencement of disease about three years before she came under notice (1st May, 1883). Almost complete aphonia, some dyspnœa. Nothing to be seen of vocal cords, the whole aperture of the larynx being filled with irregular, pinkish, cauliflower-like masses, originating apparently from the ventricular bands, laryngeal ventricles, and both surfaces of the vocal cords. A large number of them immediately removed from within with laryngeal forceps. In a number of sittings larynx nearly cleared. Voice got much better, dyspnœa altogether disappeared. The growths turned out to be true papillomata. Patient ceased attending before all the growths were removed because she expected her confinement. When

she appeared again in December extensive new formations had taken place. She was again subjected to intra-laryngeal treatment, and considerable quantities of papillomatous growth were removed on almost every visit, but the patient attends rather irregularly, and the treatment is not yet concluded.

Case 2. *Pedunculated fibroma.*—A. B—, æt. 30, cabdriver, applied on January the 12th, 1883, on account of complete aphonia, which had gradually come on some years ago. On examination a large growth, looking very much like a nasal polypus, evidently pedunculated, was seen to originate from the anterior part of the left vocal cord. During inspiration it was drawn longitudinally between and partly underneath the vocal cords, during phonation it rose, and described a quarter turn towards the right side. After Mr. W. Hull, who at that time acted as one of my clinical clerks, had on four occasions practised the introduction of the laryngeal probe, in order to accustom the patient to the touch of instruments, I succeeded on January the 19th on the first introduction of the laryngeal forceps, in removing the growth *in toto*. The patient's voice immediately returned. One week after the operation a very small loss of substance was seen at the spot from which the growth had originated. No trace of the growth itself could be detected. The left vocal cord was slightly congested, the voice normal. The patient was dismissed cured. The growth turned out to be much harder than would have been anticipated from its appearance, to have a trilobate form and a distinct pedicle, by means of which it was inserted into the left vocal cord, and to consist of bundles of wavy fibres, covered with squamous epithelium. It was therefore a true fibroma. It will be kept in the museum.

Case 3. *Subglottic fibroma* (?).—Emma H—, æt. 13, applied on January the 23rd, for aphonia, which she stated had *suddenly* made its appearance ten days previously. Her appearance and statements suggested very much functional aphonia, and I was therefore not a little surprised when on laryngoscopic examination I saw a large, smooth, white growth

appearing between the anterior ends of the vocal cords, and originating apparently from their anterior commissure. Its white surface strongly contrasted with the colour of the cords, which were considerably congested. On attempted phonation the growth was seen to rise between the cords. I told the girl, who had come by herself, that she was to come next time accompanied by her father or her mother, because I wished to speak to them about what was to be done. She, however, never came again.

Case 4. *Large broad-based fibroma (?).*—This case was, so far as appearances and symptoms are concerned, very similar to another case of mine, recently published in the 'Transactions,' of the Royal Medical and Chirurgical Society, vol. lxv, 1882, p. 167, *et seq.* The patient was a stoker, æt. 40, who for years had suffered from hoarseness and gradually increasing dyspnœa. On examination a large whitish growth, springing apparently from the anterior commissure of the vocal cords and the anterior third of the right vocal cord, and attached by a broad base to these parts, was seen. Numerous small blood-vessels ran across it. It occupied nearly the whole glottic space. On two occasions pieces were removed with laryngeal forceps (two each time), each of them being larger than a pea. After this the breathing improved (although by far the larger mass of the growth was still within the larynx), and the patient discontinued attending. The pieces removed were found to be very hard and vascular, every removal being followed by some hæmorrhage. I regret that they were not microscopically examined, but have little doubt, that the growth was of fibroid nature.

Case 5. *Congenital papillomata.*—The patient was a little girl, æt. 10 months, who was brought in a state of great dyspnœa to the hospital, and whom I tried to examine but once just before tracheotomy was performed for the relief of what was evidently laryngeal obstruction. The examination, however, was not successful owing to the child's dyspnœa, the welling up of a large quantity of phlegm as soon as the mirror was introduced, and the spasmodic contraction of the upper

aperture of the larynx. The little patient, who had already before the operation suffered from extensive bronchitis, succumbed to this complication a few days later. At the autopsy large papillomatous masses growing from above and below the vocal cords, and completely obstructing the glottis were found. The larynx will be kept in the museum.

I think it right to mention here, that I have quite recently seen and examined again the patient, whose case I described at some length in my last year's report (*vide* No. 13 of that report), and in whom there was some reason to fear, that the originally benign papilloma was in a stage of transformation into epithelioma. The local conditions, however, have not in the least changed for the worse during the past year, and according to his own statements the patient feels better than he has done for many years. There seems, therefore, no reason for upholding the suspicion, which at some time seemed well founded, viz. that a transformation into malignant growth had taken place.

9. *Laryngeal Tumour of doubtful nature.*

Y. M—, æt. 39, gas-fitter, applied on April the 3rd for slight hoarseness, which, however, according to his statements, had already been in existence for several months. At night-time he had occasionally slight pains in the right side of his throat. There was no history of syphilis. On examination a grey tumour of oval form, and the size and shape of half a bean, was seen immediately underneath the posterior three fourths of the right vocal cord. It was apparently broad-based, smooth, and was on attempted phonation quite covered by the vocal cords.

In spite of the negative history and of the complete absence of all other manifestations of syphilis, the patient was given iodide of potassium (gr. v ex aqua ter die), because the tumefaction looked more like a gummatous infiltration than anything else. On April 13th there is this note (the iodide having in the meantime been increased to gr. x ter die): Swelling beneath

right vocal cord distinctly smaller. After this date the patient unfortunately did not appear again.

10. *Eversion of Left Ventricle of Morgagni.*

Ch. P—, æt. 38, a French traveller, applied on October the 23rd, having been sent by Dr. Percy Kidd from the Brompton Hospital on account of a curious swelling, which this gentleman had discovered in the patient's larynx. The patient stated that his voice went a year ago gradually, and that he had now some pain and difficulty in swallowing. The obstacle was situated towards the left side of the neck and at the height of the thyroid cartilage. There were no pains in the chest, hardly any cough, no hæmoptysis, no dyspnœa, no emaciation. Complete aphonia. Negative history of syphilis.

On examination it was seen that the larynx was very considerably congested, and that there was apparently great thickening of the upper surface of the cricoid plate. The right vocal cord was congested but moved freely. "In the position of the left ventricular band there is a red mass, but it is difficult to make out whether it is the ventricular band itself or a new growth. It stands immovable on respiration and phonation. Possibly it is the everted left ventricle? It is at a higher level than the right vocal cord."

Lungs are healthy. Ordered iodide of potassium in increasing doses.

November 6th.—"Examination corroborated." The iodide of potassium was now discontinued and local astringent applications to the larynx substituted, but these proved of no avail.

20th.—"When patient expires strongly, it is distinctly seen that the tumour moves a little upwards. At the same time, the patient thinks when he breathes he feels something moving."

By that time I came to the conclusion that the tumour was in reality the everted left ventricle of Morgagni. It was evidently no new growth of the nature of those met with in the larynx, but presented with lime-light illumination all the characters of simple mucous membrane, and appeared to be contiguous to the left ventricular band. I never saw the left

vocal cord, although the left arytænoid cartilage moved, because the tumour entirely overlapped it even during phonation. I could not make up my mind to propose any intra-laryngeal operation, because the great tumefaction of the upper plate of the cricoid cartilage seemed to indicate that there had been perichondritic mischief before, and because I feared that the introduction of instruments into the larynx, and, indeed, the operative act itself might rouse to new activity a latent perichondritic process. The patient, on the other hand, was little inclined to submit himself to thyrotomy with subsequent extirpation of the everted ventricle, by which operation the only case, in which—so far as I know—this exceedingly rare condition was diagnosed during life,[1] was cured. Thus I had to dismiss him unrelieved.

11. *Carcinoma of the Larynx.*

The number of cases of carcinoma of the larynx, which came under observation in 1883, and in which the disease appeared to have either originated within the larynx or reached it *per propagationem* from neighbouring parts, was an unusually large one, viz. eight. Four of these patients were men, four were women. In three of these cases the correctness of the diagnosis was confirmed by post-mortem examination; in a fourth, the patient left the hospital after tracheotomy had been performed upon him by Mr. Sydney Jones, for the relief of urgent dyspnœa; the four remaining cases attended as out-patients only, and—as usual in these cases—gave up attending as soon as they had become convinced that nothing could be done for them. I give no particulars about them, as none of them offered points of very special interest. One of those on whom a P. M. examination was made, died from a somewhat unusual complication, viz. pulmonary phthisis (G. S—, æt. 54, in-patient of Dr. Ord's), another one (D. A—, æt. 49, in-patient of Dr. Stone's) from intercurrent pneumonia, the third (T. B—, æt. 64), who suffered from epiglottidean carcinoma, and on whom my former clinical clerk, Mr. Carpenter, made a partial P. M. examination, died from cachexia.

[1] Lefferts, 'New York Medical Record,' June 3, 1876.

12. *Etiology of the Cases of Paralysis of the Laryngeal Abductors. Observed in* 1883.

Three of these cases were bilateral, five unilateral. Of the former two occurred in males, one in a female. The first male is the patient (J. K—) suffering from tabes, to whose case I have already referred in different publications of mine.[1] He came into George Ward under Dr. Ord on account of the aggravation of his tabic symptoms. The laryngeal paralysis, which preceded all other phenomena by nearly two years, shows up to date, *i.e.* nearly eight years after the onset of the affection, no change whatever.—In the second male, who was also in George Ward under Dr. Ord, cerebral syphilis was very likely at the root of the affection. His breathing improved considerably under the use of iodide of potassium and mercurial inunctions, but the normal degree of abduction on deep inspiration was not obtained. He left the hospital much improved, and has not since been heard of.—The etiology in the third case, that of a married woman, who was in Charity Ward under Dr. Ord, remains obscure up to the present. The dyspnœa in her case was so great that tracheotomy had to be performed. She still occasionally attends the Throat Department wearing a tracheotomy tube. The state of the larynx is unchanged, the cords lying close to each other. Anti-specific treatment in this case, which seemed—though not very plainly—indicated, was pushed very energetically before the performance of the operation, but proved to be of no avail.

Of the remaining five cases of unilateral abductor paralysis, of which one occurred in a man, and the remaining four in females, I have only to say, that in one an aneurism of the aorta, in one a mediastinal tumour (probably), in one carcinoma of the œsophagus, and in one carcinoma of a gland situated between œsophagus and trachea caused the palsy. In the fifth case the etiology remained obscure.

[1] 'Trans. Clin. Society,' 1878, p. 141. Ibidem, 1879, p. 184. 'Archives of Laryngology,' 1881, p. 215, Case 21.

13. *Anchylosis of the Crico-Arytenoid Articulation.*

The cause of the anchylosis in all the three cases which came under observation, was tertiary syphilis of the larynx. In one of them besides numerous other marks of old ulceration in the pharynx and larynx there was fixation of the left vocal cord in the common position of respiration with considerable thickening of the left arytenoid cartilage and complete aphonia. The patient in this case was a man, æt. 35. In both the other cases the patients were women and the mechanical fixation was bilateral. In one of them both cords were fixed just in the cadaveric position, the voice was, of course, completely lost, and the patient was constantly short of breath, though no stridor could be perceived and the dyspnœa was evidently not very considerable. In this case there was in addition—no doubt due to cicatricial contraction during the healing of a laryngeal ulcer—luxation of the greatly thickened left arytænoid cartilage, its processus vocalis being turned much upwards and outwards. In the third case, which is still under observation, so much thickening of the cricoid plate had taken place, the cords being simultaneously fixed very near each other, that not only was the patient always short of breath, but serious attacks of dyspnœa occurred, whenever she caught a slight laryngeal catarrh, which happened rather frequently. Tracheotomy has therefore recently been performed on her by Sir William MacCormac, and she is now much better, since she wears the tube.

14. *Gumma of the Trachea.*

H. H—, æt. 16, single, applied to the Throat Department on October the 19th, 1883, for great dyspnœa, which was stated to have gradually increased for some weeks. She had been treated three years previously at the hospital for syphilis (!). On examination of the throat it was seen that the uvula was completely lost, and the soft palate perforated in several places. The larynx was quite healthy. "In the trachea there is seen at the height of about the fourth tracheal

cartilage a large, irregular, red mass, occupying almost the whole lumen of the trachea, originating apparently from the anterior and right lateral walls, and leaving towards the left side only an excessively small space for breathing. The upper free border of the swelling is whitish and in part irregular. On auscultation of the trachea no flapping sound to be heard. The great inspiratory stridor is easily explained by the excessive narrowness of the lumen of the trachea."

The patient was urgently recommended for immediate admission and no medicine therefore prescribed. Instead of applying, however, directly to the authorities she went away, remained for four days more without any medical treatment, and only returned on the 23rd to the Throat Department, when the dyspnœa had still further increased. "Tracheal aspect has very considerably changed since the 19th. The tumour then seen has to a great extent broken down, and one is now enabled to see that it was not an isolated tumour, but the uppermost part of a general tumefaction, which extends a considerable distance down the trachea. At the same time it is seen that the left lateral wall is also infiltrated."

The patient was now at once admitted into Charity Ward under Dr. Ord. The following is the state on admission, taken on the 24th by Mr. Milton: "Well-nourished girl, suffering from difficulty of breathing. Expiration is quiet and easy, but inspiration is accompanied by loud stridor. At times she breathes quite normally, but at others with considerable difficulty, the stridor being most marked during sleep. Her voice also varies in character, at times it is fairly clear, at others it is quite harsh, and at others aphonic. The larynx does not move with respiration, and there is a well-marked thickening to be felt immediately above the sternum, extending for about two to three cartilages. It seems to fade away below the sternum, and the lower border is not quite evident. Resp. 20.

Chest well made and moves well. Resonance good at right apex, slightly less at left. Breath-sounds harsh all over and almost tubular at left apex. Occasionally they are wavy, but there is nothing more than could be accounted for by the tracheal mischief. Posteriorly the left apex is slightly duller than the right. Breath-sounds harsh with occasional

crepitation at left apex. Vocal resonance and fremitus normal.

Heart.—Dulness commences at fourth rib. Apex beat felt just below and internal to nipple. Sounds normal. Pulse 86, soft, compressible. Arteries normal.

Abdomen, liver, &c., normal.

The uvula is absent, and at the point of its normal attachment there is a white cicatrix and considerable puckering. The hard palate presents towards the upper part a patch of partly healed ulceration with a marked granular appearance. There are two perforations of the anterior pillar of the fauces on the left side. Tonsils not visible.

There are no eruptions to be seen on the body, except a few spots on the legs which resemble the remains of scabies.

Enlarged glands in each submaxillary fossa and over each clavicle.

Eyes normal in appearance, no keratitis.

Urine 1016, acid, nothing abnormal.

The larynx on laryngoscopic examination is seen to be quite healthy, but below the vocal cords the trachea is seen to be narrowed by a rounded, pulpy-looking growth, projecting from the front and from either side of the trachea, and leaving a chink about one or two lines in breadth situated a little to the left and posteriorly. On deep inspiration this cleft almost entirely disappears.

Ordered: Pot. Iod., gr. x c. Liq. Hydr. perchlor. ℥ j, ter die, and mercurial inunctions.

October 28th.—Since admission the patient's respiration has continued much as before. At times she breathes quite easily, at others with much difficulty and with great noise. No cyanosis at any time. Slight cough.

30th.—Patient's speech and breathing are much better. She does not now breathe stertorously either when awake or asleep. She also feels better.

November 2nd.—On examination the tumour in the trachea seems to have quite disappeared, and one sees right down to the bifurcation of the trachea.

3rd.—When the vocal cords are widely separated, there is still a projection to be seen on the right side of the trachea, with a white and sloughy-looking patch on it.

6th.—The least trace of a projection is still visible on the right lateral wall, the swelling on the left and on the anterior walls has quite disappeared. The tracheal mucous membrane is much congested.

On the 12th of November the patient was dismissed cured.

Isolated tertiary syphilis of the trachea is so rare, that at present every single case that comes under observation ought to be recorded. Moreover one has rarely the opportunity of following so closely the single stages of the development of gummatous infiltration in the trachea, as I had in this instance. For this reason I have copied *verbatim* the observations made in the Throat Department and in the ward, and only left out a few remarks having no bearing upon the points of interest.

Statistics of Diseases treated in the Throat Department.

With regard to the general principles of the following statistics, to their shortcomings and to their limited value I beg to refer to the remarks in my last years' reports (See pp. 127, 128).

The total number of patients seen in the Throat Department from January 1st to December 31st, 1883, was 691. Of these twenty-five were immediately transferred to other departments because the throat-symptoms played only a subordinate part in their affections, and eight, in whom no satisfactory examination could be made on their first appearance, did not come again. Of the remaining 658, 277 were men and 381 women. These 658 paid altogether 2199 visits, which makes an average of from three to four attendances for every individual patient.

A. *Pharyngeal Affections.*

Disease.	Number of patients.		
	Male.	Female.	Total.
1. Isolated anæmia of pharynx	1	2	3
2. Acute pharyngitis	15	32	47
3. Mycosis pharyngis leptothricia	1	—	1
4. Acute uvulitis	6	—	6
5. Chronic pharyngitis (including granular form)	10	31	41
6. Herpes of pharynx	—	2	2
7. Acute tonsillitis	80	86	166
8. Chronic tonsillitis and hypertrophy of tonsils	13	36	49
9. Abscess of soft palate	—	1	1
10. Benign neoplasms of soft palate and uvula	3	—	3
11. Syphilis *a.* Congenital [1]	(2)	—	—
11. Syphilis *b.* Secondary	8	13	21
11. Syphilis *c.* Tertiary	4	15	19
12. Carcinoma [2]	(1)	—	—
13. Paræsthesia and hyperæsthesia	1	10	11
14. Adenoid vegetations	9 (+2) [3]	14 (+1) [3]	23
Total	151 (+5)	242 (+1)	393

[1] Included under "congenital syphilis of the nose."

[2] Included under "carcinoma of the larynx."

[3] These were found in cases of acute tonsillitis and laryngitis.

B. *Laryngeal and Tracheal Affections.*

Disease.	Number of patients.		
	Male.	Female.	Total.
1. Isolated anæmia of larynx	—	2	2
2. Acute laryngitis (including simple catarrh)	44	30	74
3. Isolated œdema of vocal cords	1	—	1
4. Submucous abscess of larynx	1	—	1
5. Laryngorrhœa	—	1	1
6. Chronic laryngitis	10	4	14
7. Benign neoplasms: *a.* Papillomata	—	2	2
7. Benign neoplasms: *b.* Fibromata	2	1	3
8. Laryngeal tumour of doubtful nature	1	—	1
9. Eversion of left ventricle of Morgagni	1	—	1
10. Carcinoma: *a.* Per propagationem	1	2	3
10. Carcinoma: *b.* Endolaryngeal	3	2	5
11. Syphilis of larynx: *a.* Congenital	3	—	3
11. Syphilis of larynx: *b.* Secondary	6	7	13
11. Syphilis of larynx: *c.* Tertiary	4	7	11
12. Phthisis of larynx	16	15	31
13. Perichondritis arytænoidea (tubercular?)	—	1	1
14. Anchylosis of crico-arytænoid articulation (all syphilitic)	1	2	3
15. Immobility of vocal cords from obscure causes	1	2	3
16. Foreign bodies in larynx (?)	2	—	2
17. Paralysis: *a.* Complete, of vagus or recurrens	1	—	1
17. Paralysis: *b.* Of abductors (bilateral and unilateral)	3	5	8
17. Paralysis: *c.* Of adductors	1	17	18
17. Paralysis: *d.* Of internal tensors	—	3	3
17. Paralysis: *e.* Of individual nerve twigs	—	2	2
17. Paralysis: *f.* Myopathic, in laryngeal phthisis	—	1	1
18. Spasmus glottidis	1	—	—
19. Isolated tertiary syphilis of trachea	—	1	1
20. Pressure on trachea and bronchus by suppurating bronchial gland[1]	1	—	1
Total	104	107	211

[1] This interesting case has been brought by Mr. Makins before the Pathological Society (*vide* 'Brit. Med. Journ.,' March 22nd, 1884, p. 559), and will be published in full in the Society's 'Transactions' for this year.

C. *Nasal Affections.*

Disease.	Number of patients.		
	Male.	Female.	Total.
1. Epistaxis	1	2	3
2. Chronic rhinitis	2	2	4
3. Ozæna	1	3	4
4. Syphilis *a.* Congenital	2	1	3
4. Syphilis *b.* Secondary	—	—	—
4. Syphilis *c.* Tertiary	1	1	2
5. Exostosis of the nasal septum	1	—	1
6. Thickening of posterior part of septum	1	—	1
7. Reflex neuroses due to swelling of the erectile tissue of the nasal mucous membrane (?)	2	—	2
Total	11	9	20

D. *Œsophageal and Miscellaneous Affections.*

Disease.	Number of patients.		
	Male.	Female.	Total.
1. Globus hystericus	1 (?)	4	5
2. Spasm of œsophagus	1	—	1
3. Tertiary syphilis of œsophagus (?)	—	1	1
4. Carcinoma of œsophagus	2	—	2
5. Carcinoma of glands between œsophagus and trachea	1	—	1
6. Foreign body in œsophagus (?)	—	1	1
7. Acute glossitis	1	—	1
8. Isolated anæsthesia of tongue	—	1	1
9. Secondary syphilis of tongue	—	5	5
10. Lingual tuberculosis	1	—	1
11. Herpes labialis	—	1	1
12. Hereditary (?) syphilis of lip	—	1	1
13. Enlarged cervical glands	1	4	5
14. Erysipelatous (?) infiltration of cellular tissue of neck	2	—	2
15. Goitre (parenchymatous)	—	2	2
16. Myxœdema [1]	—	1	1
17 Syphilitic (?) growth below jaw	—	1	1
18. Aneurism of aorta	1	1	2
Total	11	23	34

[1] This case has been described by me in full in the 'Transactions of the Clinical Society,' vol. xiv, 1881, p. 61.

Grand Total.

Disease.	Number of patients.		
	Male.	Female.	Total.
Pharyngeal	151	242	393
Laryngeal	104	107	211
Nasal	11	9	20
Œsophageal and miscellaneous . . .	11	23	34
Grand total	277	381	658

An inspection of these statistics and comparison with the corresponding part in my last report shows the following points of interest:

1. The relative proportion of the sexes amongst the patients has remained almost entirely unaltered, *i.e.* the proportion of the male to the female patients has again been nearly three to four. As in my last year's report I observed that this proportion rather differed from that of other places, it being the almost universal experience that the male sex suffered more frequently from diseases of the upper air passages than the female, and that accordingly the number of male patients was almost always found to be larger than that of female patients in throat departments and throat hospitals. I stated last year that I had no explanation to offer of the difference shown in this respect by my tables, and I wish the following to be looked upon rather as a suggestion than as an explanation. Amongst the patients I see at the hospital there is a rather large number of trivial cases. It has struck me that the great majority of the latter was furnished by the women and children, and that if the more serious cases were alone considered, the proportion of the sexes would be considerably altered. A glance at the tables will show that this is more than a mere theoretical speculation; it will be seen that in diseases which really prevent a man from *working* (*e.g.* acute tonsillitis, phthisis of the larynx, &c.) the proportion of the sexes is either equal or even reversed in favour of the preponderance of the male sex. And here it ought to be

mentioned that the out-patients are seen in the *middle of the day*, which circumstance very likely, interfering as an attendance at midday would do with a man's work, tends to keep away a good many male patients suffering from slight complaints. However, as I have just said, this suggestion must be taken for what it is worth.

2. The total number of patients seen has considerably increased, viz. from 505 to 658. If it be asked whether this increase has been distributed in equal proportions amongst the different affections which came under observation, it will be found that the pharyngeal affections have most of all contributed to it. Last year we had—

285 pharyngeal against 157 laryngeal affections, *i.e.* the proportion was 7 to 4.

This year we have—

393 pharyngeal against 211 laryngeal affections, *i.e.* the proportion is nearly 2 to 1.

If it be further asked whether this result be due to an increase of any special affection, we come at once to the fact that it has been almost exclusively caused by the enormous increase of cases of acute tonsillitis. Last year we had—

77 cases of acute tonsillitis out of 505 cases all told, or a proportion of 1 to $6\frac{1}{2}$.

This year we have—

166 cases of acute tonsillitis out of 658 cases all told, or a proportion of 1 to 4.

This proportion is a very extraordinary one. I am not aware that a similar observation has been made elsewhere. There would be no reason for surprise if it could be made out that at any time of the year there had been an epidemic of acute tonsillitis, in consequence of which the great increase had taken place, but, as will be presently seen from the following table, there has been nothing of the sort.

Table of Cases of Acute Tonsillitis.

Month.	AGE.																		Total in month.
	Males.									Females.									
	0–5	–10	–15	–20	–25	–30	–40	–50	–74	0–5	–10	–15	–20	–25	–30	–40	–50	–66	
January	...	1	1	1	1	...	...	1	...	...	...	2	3	1	...	...	...	...	11
February	...	...	3	4	1	...	...	...	...	...	...	1	1	...	...	...	...	...	10
March	...	...	2	2	...	1	...	...	...	...	...	1	2	...	1	1	...	...	10
April	...	1	...	3	...	1	...	...	1[1]	...	1	...	...	3	...	1	...	...	11
May	...	1	...	1	4	1	...	1	...	...	1	...	2	2	1	...	...	...	14
June	...	...	2	1	1	...	...	...	...	...	...	1	1	1	2	...	2	1[2]	12
July	1	...	3	2	1	1	1	...	...	...	1	1	2	...	2	...	1	...	16
August	1	2	...	4	3	...	...	...	...	...	...	5	1	...	...	2	...	...	18
September	...	...	4	3	3	...	...	...	...	1	...	3	3	...	...	1	1	...	19
October	...	1	3	2	...	...	...	...	1	...	...	1	2	2	2	3	2	...	19
November	...	...	...	4	...	3	...	...	...	...	...	2	2	1	2	1	...	...	15
December	...	...	...	...	1	...	...	...	...	...	1	1	3	1	1	2	1	...	11
Total	2	6	18	27	15	7	1	2	2	1	4	18	22	11	11	11	7	1	166
	80									86									

From this table it is obviously impossible to ascribe to any influence of epidemics or seasons the enormous increase of the cases of acute tonsillitis. I am not yet prepared to suggest any explanation on this point, but it is one to which I shall pay continued attention.

In concluding this report it is again my pleasing duty to return my sincere thanks to all my colleagues for their continued kindness, goodwill, and support, and to my former and present clinical clerks for the efficient assistance I have received from them. My special thanks with regard to the preparation of this report are due to my present clinical assistant, Dr. H. W. G. Mackenzie, who has compiled the foregoing statistics according to the principles laid down in my first report, and who has also otherwise very effectually assisted me in making this contribution ready for publication.

[1] Man, aged 74.

[2] Woman, aged 66.

A CASE

OF

ARTIFICIAL ANUS TREATED BY RESECTION OF THE SMALL INTESTINE,

WITH

SOME REMARKS ON THE METHOD AND THE RESULTS OBTAINED BY IT.

By G. H. MAKINS,
RESIDENT ASSISTANT SURGEON.

The case related below is of considerable interest as a very successful one of a comparatively new mode of treatment, up to the present time resorted to by continental surgeons only, with the single exception of a case reported by Mr. Kinloch from America. Attention will first be drawn to several points in the case, and then a brief reference will be made to the results obtained by the method, and such a comparison as is possible will be drawn between it and that of Physick and Dupuytren.

C. C—, æt. 21, was admitted into St. Thomas's Home, under the care of Mr. Edmunds, on February 21st, 1884. The patient had been the subject of right inguinal hernia since eight years of age; a truss had been worn seven years, but had been discontinued for the last six years, nothing having been seen of the rupture.

On February 19th the hernia came down after a fit of coughing, and neither he nor his doctor were able to reduce it. He vomited occasionally during the 19th and 20th, and an unsuccessful attempt was made to reduce it under chloroform.

At noon on the 21st his condition was the following. There was a very tense hernia on the right side. The tumour was marked by a constriction opposite the external ring. The skin was reddened from manipulation. There was much tenderness about the neck of the sac. He was restless, complaining of pain. Temperature 99·2°. The pulse was somewhat frequent. The tongue was furred and moist.

At 2 p.m. he had vomited once since admission. Ether was given, and herniotomy performed. The sac contained bloody fluid, and about five inches of highly congested small intestine, and some omentum. The gut was very dark, but still retained its polish. There was no lymph on the surface, and it bled readily. The stricture at the neck of the sac was divided, and the gut returned. The hernia was of the congenital variety. The neck of the sac was dissected out, the pillars were approximated by two silk sutures, and the wound closed. The operation was performed antiseptically, and a carbolic gauze-dressing used. The urine contained a trace of albumen.

During the next five days the progress was not satisfactory. He suffered with fever, the belly became distended, and, after the second day, he frequently vomited fæculent matter. The bowels did not act, although he passed flatus *per anum*. During this time he was kept under the influence of morphia.

On the evening of the fifth day a considerable amount of liquid fæces escaped from the wound.

During the next week, steady improvement took place. The discharge of fæces from the wound continued, and a daily motion was passed *per anum*. At this time some distension of the abdomen commenced, and on March 11th the following note was made: The distension of the belly is considerable. Fæcal matter has ceased to escape from the wound, and the bowels have not acted for four days. The belly is tympanitic; the coils of intestine are well marked out; there is dulness in the right iliac region. He has not much pain, but some tenderness of the belly. The patient was put under ether, and a probe was passed upward and outward in the line of the

inguinal canal, as far as opposite the internal ring, where it was cut down upon. The finger was introduced into the wound, and passed into the dilated intestine apparently in both directions. Several pints of liquid fæces escaped.

Gradual improvement followed the establishment of a free vent for the intestinal contents, fæcal matter continuing to escape from the artificial anus, the bowels meanwhile acting irregularly.

On April 8th an attempt was made to close the artificial anus. The patient was etherised, the wound enlarged outwards in the line of Poupart's ligament, and the gut well exposed. The finger could be passed in either direction; and, as there was no spur-like projection from the mesenteric border, the edges of the gut were refreshed and brought together.

On the 10th fæcal matter began to escape from the wound, and in a few days he relapsed into his old condition.

At this period, the patient being no longer able to pay the charges of the Home, he was transferred into the general wards; and, by the kindness of Sir William MacCormac, came under my care.

His condition on April 25th was the following: He was pale and very considerably emaciated, but cheerful, and anxious to have something done to relieve him. Although he took food well, the emaciation was progressive, the whole of the intestinal contents escaping by the artificial anus. There had been no proper action of the bowels since the last operation on April 8th. The artificial anus was situated one and a half inches above the centre of Poupart's ligament; it was about two inches in diameter, circular in outline, with sloping granulating walls composed of the whole thickness of the abdominal muscles. The mucous membrane of the intestine was slightly prolapsed at the bottom of the pit. The gut was firmly attached, and the finger could be readily introduced, passing, in one direction only, nearly directly upwards. An area of eczema, equal to one third of the whole abdominal surface, surrounded the opening, extending over the outer side of the right thigh. A constant discharge of intestinal fluid and semi-digested food, of a yellowish-green colour, took place; the fluid was frothy, and had a faint, sickly odour. The finger could be

readily passed into the upper end of the bowel, but the lower end could not be found.

The patient was kept for a week with a small shield applied around the orifice, from which he constantly mopped away the fæcal discharge with a piece of absorbent wool; and in this way the condition of the surrounding skin was very materially improved.

The operation was fixed for May 3rd; and on May 1st the necessary preparation was commenced. He took his last meal at 8 p.m., but at the same time nutrient enemata were commenced, made of a drachm of pancreatic emulsion, two eggs, half an ounce of brandy, and three ounces of strong beef tea. These enemata were continued every four hours, to ensure his being in fit condition to bear the long operation. During the 2nd, the upper end of the bowel was irrigated four times with salicylic lotion until the fluid came away colourless. In spite of this preparation, bile-stained fluid was still escaping from the opening at 8 a.m. on the 3rd; he was therefore again washed out with salicylic lotion; and at 9 a.m. the operation was proceeded with.

Nitrous oxide gas was administered, followed by ether, and the operation was performed in the following manner: The wound was disinfected with 5 per-cent. carbolic lotion, and a piece of sponge attached to a string was passed for about two inches into the upper end of the bowel, to prevent escape of intestinal contents during the dissection. A vertical incision through the abdominal walls was carried upwards one inch and a half, and one inch downwards. The upper end of the gut was then dissected free from its adhesions; and when this was accomplished, the lower end was found lying quite parallel to and immediately below it. The upper end was about normal in size; the lower was contracted to the size of a pencil externally, with an opening large enough to admit a director. The lower end was covered with normal peritoneum. The gut was now provisionally clamped with the forceps to be later described, the two ends drawn forward, and a number of small sponges attached to strings were packed around them, so as to securely close the abdominal cavity. The small sponge was withdrawn from the cavity of the upper end of the intestine, and about one inch from the upper and two and a half inches from the lower extre-

mities was excised, together with a wedge of mesentery about four inches long by three-quarters of an inch in width. The cut surfaces then nearly corresponded in size. Many bleeding points had to be taken up in the mesentery, which was approximated with six silk stitches, and then the suture of the gut was proceeded with in the following manner: A first row of twenty-five very fine China-twist stitches were passed by a small curved needle, such as is used for suturing the sclerotic. These passed through the whole thickness of the gut, about one tenth of an inch from its free margin, commencing at the mesenteric border. They were tied in batches of five at a time, and then the second row of Lembert's peritoneal stiches were passed in the same manner. During the stitching, which took about three quarters of an hour, the gut was kept moist with warm salicylic lotion. The suture being complete, the gut was well washed, the clamps were removed, the sponges extracted from the abdominal cavity, and the whole was returned.

It was found impossible to bring the centre of the wound together, although lateral incisions in the skin were made to relieve tension; therefore only the upper and lower angles were closed, the intestine being left at the bottom of a deep pit, as before the operation. The granulations were shaved off, the whole wound dusted with iodoform, the cavity filled with iodoform gauze, a pine-wood bag applied, and the patient was removed to bed in fair condition, although the operation had lasted one hour and fifty minutes.

He rapidly recovered from the shock of the operation, and during the next thirty-six hours was kept constantly under the influence of morphia; he was sick twice, apparently the result of the anæsthetic, but complained of no pain. He had occasional hiccough. The tongue and lips were dry, but with no fur or sordes. The temperature did not rise above normal, pulse 120, of fair strength, resp. 20. The abdomen was moving well. The urine was scanty, high coloured, containing a little bile, strongly acid, no albumen, about twenty ounces in twenty-four hours.

On May 5th the wound was dressed. The main opening gaped, and on removal of the iodoform plugs, the intestine was seen at the bottom, covered with lymph; vermicular movements were visible. The wound was sweet and healthy-looking. The

sutures in the abdominal wall were removed. He passed wind *per anum*. On this day he recommenced his nutritive enemata, sixty-two hours and a half since the last, and eighty-nine hours since any food had been taken by mouth. Temperature normal, pulse 120, resp. 20. He had no pain or distension of the belly.

6th.—Progress was still quite satisfactory. The bowels acted yesterday, and once again to-day about two hours after an enema. He was ordered to have a teaspoonful of brandy and soda every hour. He still had morphia occasionally.

8th.—He began taking one teaspoonful of Brand's essence yesterday each hour, as well as the brandy and soda. The enemata were continued. The wound was suppurating and granulating healthily; the line of suture with one or two stitches was visible at the upper angle of the wound. His general condition was quite satisfactory.

10th.—The urine, which had been scanty and very concentrated, this night contained blood and one half albumen; specific gravity, 1026. Fluid had been increased to about half an ounce per hour. He had pain in the back. The tongue was clean and moist. He had no headache. Temp. 99°, skin dry, pulse 94, full.

The amount of fluid was now very much increased. The urine continued to contain blood, but in decreasing quantities, till midday on the 12th, when it disappeared. The urine contained numerous uric acid crystals and much free blood, but at no time casts of either blood or epithelium.

After this time the progress to complete recovery was uninterrupted; he continued the enemata till the 15th (after the 13th only three daily), and from that time all nourishment was taken by mouth. On the 19th bread and butter was allowed, and on the 28th ordinary mixed diet.

The healing of the wound was somewhat prolonged on account of the large depression which had to be filled with granulations; during the healing twelve of the intestinal sutures were discharged. There was never any trace of fæcal discharge, and the wound remained sweet throughout. On June 3rd the pine-wood dressing was discontinued, and the superficial granulating wounds were dressed with sulphate of zinc lotion; on the 10th he got up, and on the 21st he was discharged cured, with a

spica bandage. The bowels acted regularly, and he felt as well as before he had had any trouble.

I saw the patient at the end of July. He had completely recovered his normal health, and looked well nourished. The bowels were acting regularly and he had no pain. A bubonocele, which existed on the left side at the time of operation, was considerably increased in size, having now reached the upper part of the scrotum, and on the right side there was a general bulging of the abdominal wall in the iliac region. The cicatrices were firm.

A truss, consisting of a plate covering the whole right iliac region, was ordered, and has proved effective in supporting the weakened part.

The indications for the method of operation selected in the above case were shortly the following:

1. The opening in the intestine was very high up, as was evidenced by the rapid escape of solid and fluid nourishment, and the very considerable emaciation due to consequent defective nutrition.

2. The entire intestinal contents escaped by the abnormal opening, the discharge was constant, uncontrollable, and the cause of very great local irritation.

3. A plastic operation had already been tried, and had proved unsuccessful.

4. The opening of the lower end of the intestine could not be found, an insuperable objection to the application of Dupuytren's enterotome. The subsequent operation fully explained the difficulty in finding the lower opening.

As to the operation itself the case presents some points of novelty: 1, as to the method of provisional closure of the abdomen; 2, in the instruments used for provisional closure of the intestines; and 3, in the suture employed.

For the provisional closure of the abdominal cavity—a matter of extreme importance, considering the prolonged nature of the operation and consequent danger of cooling the parts, and the risk of the entrance of intestinal contents—several devices have been employed, the most effective of which is, perhaps, that of Madelung, of closing the wound in the walls with provisional sutures. The ordinary practice of closing the wound with sponges, adopted in ovariotomy, seemed to me the simplest;

that was therefore adopted, with the modification of substituting a number of small sponges attached to strings for the single large flat one, for which the comparatively small size of the wound was unsuited.

For the provisional closure of the gut to ensure the cardinal point, namely, prevention of the escape of intestinal contents into the wound, several plans have been adopted: 1, the use of a provisional ligature of stout catgut, carried through the mesentery in immediate proximity to the gut; 2, compression by the fingers of an assistant; 3, the pylorus-clamp of Rydygier; 4, the elaborate clamp of Mr. Treves; 5, the use of a pedicle-clamp, or the handles of an artery-forceps sheathed in india-rubber tubing.

To all these methods some disadvantages apply. The provisional ligature, or compression by fingers, allows possible strangulation on the one hand, or inefficiency on the other; the heat and tendency to dry the intestine being a further objection to digital compression. The clamps of Rydygier or of Treves necessitate perforation of the mesentery for their application—an unnecessary extra wound. Improvised clamps, made with handles of forceps, &c., do not work with parallel blades; while large clamps, such as are used in ovariotomy, are unnecessarily weighty, and hence cumbersome.

While thinking over my operation, it struck me that a very much more useful clamp could be manufactured on the model of the ordinary bull-dog forceps, by merely lengthening the blades and sheathing them with india-rubber tubing. I therefore had two pairs made by Mr. Millikin, adding a screw through the handles, by which additional compression can be applied if the spring be not sufficient. These forceps were used and proved eminently satisfactory, and I would claim the following advantages for them: 1. They are of small size and weight. No room is taken up by them, and they in no way interfere with the necessary manipulation for introducing the sutures. 2. There is parallel action of the blades, and hence even compression. 3. They necessitate no puncture of the mesentery.

The suture employed corresponds to Czerny's "Etagennaht," with the exception that in Czerny's suture the first row is carried through peritoneum and muscular coat, in the lower end of the gut, and through the whole thickness of the upper, with

a view to the avoidance of stenosis, immediate or remote. A large number of silk sutures, fifty in all, were introduced; this is an important point in view of the large number of failures

Provisional clamp forceps.

due to subsequent escape of intestinal contents. The method of suture is very efficient, and, as far as can be seen, not capable of much improvement.

Lastly, as to the employment of any support in the lumen of the intestine during the introduction of the stitches, Mr. Treves' paper in the 'Medico-Chirurgical Transactions,' led me to prepare myself with a collapsible india-rubber bag; but, when the stage of suture was arrived at, the ease with which the stitches were introduced rendered the use of it unnecessary.

The course of the case to convalescence was so eminently satisfactory as to leave small room for comment, the only point requiring notice being the occurrence of the attack of hæmaturia. The absence of either blood or epithelial casts, together with the small amount of constitutional disturbance, allow this to be ascribed to simple congestion, induced by the concentrated condition of the urine, loaded with crystals of uric acid, consequent on the small amount of fluid nourishment administered, an error to be guarded against in any subsequent case; it must be noted, moreover, that there was possibly some antecedent renal disease, since the presence of a small amount of albumen was recorded on admission. This was not discoverable later, and the patient had never had scarlatina.

The favorable issue of the case induced me to collect and examine the cases already recorded with a view to ascertaining the average percentage of failure and mortality, after the operation of resection, with the object also of comparing the results with those obtained by the older methods. I have succeeded without much difficulty in compiling a table of all the cases of resection published up to the current year, but with cases treated with the enterotome I have not been so fortunate,

the cases on record are spread over so many years that I have been unable to collect the details of a sufficient number. I shall, therefore, content myself with the often quoted results given by Dupuytren himself in his 'Leçons orales,' forty-one in number, merely referring to a second series collected by Heimann and quoted by Körte ('Berlin klin. Wochenschr.,' 1883, Nos. 51 and 52), which are unaccompanied by sufficient details to be of any use.

We will first turn to the all important question of mortality, and here apparently the enterotome has a very considerable advantage.

In 39 cases of resection we find 15 deaths, a percentage of 38·4, against 3 deaths in 41 cases with the enterotome, or only 7·3 per cent.

In face of so large a majority in favour of the enterotome, it will be necessary to examine closely the causes of death in each, and to endeavour to show that a considerable number of the fatal cases were due to causes which, with the improved methods now at our disposal, may be eliminated.

Nine cases (23 per cent.) died of septic peritonitis, in five instances due to fæcal extravasation. In three of these extravasation took place at the mesenteric border, and in two the gut had been separated for some extent from its mesenteric attachment, in one to allow of invagination. Fæcal extravasation, therefore, seems the chief factor here, and in most cases this is due to defective suture. Among the fatal cases Czerny's suture was only used once, hence there is room for hope that the wider use of this method may considerably lessen the danger of escape of fæcal matter. The other point for especial care is the suture at the mesenteric border, which should be the starting point and combined with efficient closure of the gap in the mesentery itself. Madelung's experiments on animals, demonstrating as they do the fact that separation of the gut from its mesentery, even for a limited extent, almost invariably leads to gangrene of the gut freed, are sufficient argument for the discarding of any invagination method.

In four of the fatal cases stenosis of the lumen of the bowel is noted, twice at the point of suture once above it, and in one Ramdohr's invagination was the probable cause. In one the stenosis was independent of the suture, and might have been a

cause of death after any other operation, in the other two it must be presumably attributed to too much bowel wall being included in the suture. In three of these cases, therefore, the cause is one for possible future elimination. Temporary narrowing of the lumen at the seat of suture due to inflammatory thickening is no doubt the explanation of the constipation immediately following the operation noted in some of the other cases. In the fifth case the patient died from internal strangulation behind an old peritoneal band, a cause not directly connected with the operation, and which a subsequent abdominal section was made too late to relieve. In two cases collapse is assigned as the cause of death, in one the patient was very weak prior to operation and died in a few hours, and in the other the collapse is ascribed to cooling of the belly contents due to the coldness of the room in which the operation was performed. The remaining two deaths are ascribed, one to pulmonary embolism, a result not specially connected with operations on the bowels, the other to exhaustion subsequent to total failure of the operation and re-establishment of the artificial anus. Taking, then, the causes of death as a whole it seems not unreasonable to hope for a considerable improvement in future statistics as a result of advance in our knowledge and improvement in technique especially as to suture.

In the fatal cases treated with the enterotome, peritonitis is the cause ascribed. In a second series of cases published by W. Körte (loc. cit.), only five deaths (4·8 per cent.) occurred in 104 cases.

Secondly, as to the percentage of failures, here the results, as would be expected, are much more favorable in the case of the thorough operation. Among the resection cases the patient was left with an artificial anus only three times, a percentage of 7·6. Of Dupuytren's 41 cases the anus persisted nine times, or 21·9 per cent. In Heimann's no information is given on this head, but in Körte's 12 cases two failures occurred, or 16·6 per cent.

The favorable nature of the statistics above quoted undoubtedly prove that in cases where the enterotome is applicable it is to be preferred in the present state of our knowledge, although it can hardly be denied that the prospect of a theoretically good result is more likely in the case of resection than

where the clamp is used, since the mode of cure obtained by the latter is merely the establishment of a cicatricial track. It is, moreover, probable that if the truth could be come at, the above statistics would prove much too favorable to the enterotome, both as to mortality and failures. So few cases have been published in this country, that no definite opinion can be formed, but the operation has always been regarded as a dangerous one. (For instance, Mr. Barker, 'Lancet,' 1880, vol. ii, p. 970, tells us that he could only hear of one case from his colleagues, and in that a speedy fatal termination took place), and in my own experience, limited certainly to two cases, it has entirely failed in doing more than effecting slight improvement. Again, in two cases included in my table of resections, it is mentioned that the enterotome had failed.

The rules to guide us in these cases as deduced from the above statistics would seem to be the following:

1. When no projection of the mesenteric border exists, a temporary tube, either of silver in two halves separable by a screw, or of india rubber, should be tried, and if after a sufficiently prolonged trial a satisfactory passage is established, a secondary plastic operation may be resorted to if necessary.

2. When both openings are readily found, but the passage of intestinal contents into the lower one is prevented by a 'spur,' Dupuytren's enterotome followed, if necessary, by a plastic may be tried.

3. If either of the former methods have failed, if the lower opening is not to be found, or if from the height of the fistula in the intestinal tract the patient is emaciating rapidly (since the average duration of Dupuytren's method varies from four months and a half to one year), resection is indicated. The application of the clamp is unsafe before the end of the second month subsequent to the formation of a fistula, since prior to that time the adhesions are not firm enough to bear interference without danger.

In looking up the cases of resection for artificial anus the series of like operations for gangrenous herniæ have necessarily come before me, and it seemed worth while to arrange them in a similar tabular form with a view to comparing the results with those done for the closure of fistulæ.

The operation is a sufficiently old one, having been performed

more than 130 years ago in Germany, shortly afterwards in France, and at a somewhat later date by Sir Astley Cooper. Sir Astley Cooper's cases were both fatal, although they survived the immediate operation. The operation seems to have been abandoned until recent advances in abdominal surgery have again brought it to the front.

In the tables below are 55 cases, with 29 deaths, a percentage of 52·7 against a percentage of 38·4 in cases of resection of artificial anus; the cause of death in the majority of cases being septic peritonitis. Here again, the deaths from this the most formidable cause are at the rate of 40 per cent., while in resections for artificial anus the percentage only reaches 28·2. Other details may be seen by consulting the table.

A comparison between the two classes of case under consideration is, of course, insufficient on the data to hand, since what we need is a list of fifty-five gangrenous herniæ treated in the usual manner; but a glance at the statistics serves to show the very great advantage of carrying out the resection of the intestine when it is in a comparatively normal condition, and hence they favour very decidedly the older method of establishing an artificial anus in cases where the condition of the gut precludes any idea of its return into the abdominal cavity. By the older method we not only obviate the disadvantage of putting the general peritoneal cavity in direct communication with a septic hernial sac, but are also saved meeting the difficulty of attempting to determine the exact limitation of morbid tissue when strangulation has been followed by gangrene.

Resections of Intestine

No.	Reference.	Operator.	Origin.	Age and sex.	Temporary compress.	Suture and material.	Length of gut removed.
1	Deutsch. Zeitschr. für Chirurgie, vol. ix, p. 521	Hüter	—	M. 43	Fingers	Lembert, catgut	—
2	Verhandl. Deutsch. Gesellsch. f. Chir., vol. vii, p. 78, 1879	Schede	Umbilical hernia, 3 weeks' standing	F. 43	Thick catgut ligature	„	Short
3	Ib.	„	—	F. 62	„	„	4¾ inches
4	Ib.	„	Fæcal fist. in linea alba, below umbilicus	F. 58	„	„	—
5	Wiener Med. Wochenschr., 1878, No. 49	Dittel	Femoral hernia	F. 47	—	Invagination, continuous suture, catgut	—
6	Ib., 1879, No. 1	Billroth	„	F. 33	—	Size of gut equalised by pleat	—
7	v. Langenbeck's Archiv f. klin. Chir., vol. xxiv	„	„	M. 16	Fingers	Silk	1¾ inches
8	Wien. Med. Wochenschr., 1881, No. 3	„	Inguinal hernia	M.	—	Silk, 17 sutures	1½ inches
9	Ib.	Weinlechner	Femoral hernia	F. 50	Fingers	Silk	—
10	Verhandl. Deutsch. Gesell. f. Chir., vol. viii, 1879	Esmarch	Inguinal hernia	—	—	—	2 inches
11	Deutsch. Zeitschr. für Chir., vol. viii, p. 410	Schönborn	In descending colon	M. 58	—	—	—
12	Berlin. klin. Wochenschr., 1881, No. 8	Thiersch	Inguinal hernia	—	Polypus forceps sheathed with india-rubber tubing, handles bound	Lembert-Kocher silk, 30	4⅜ inches

for Artificial Anus.

Reposition.	Mesentery.	Persistence of fistula.	Cause of death.	Result.	Remarks.
No	—	—	Perforation, septic peritonitis	D.	—
No	—	6th day a small disch. of fæcal matter	—	C.	Gut retracted entirely within abdomen by 12th day.
No	—	—	Pulmonary embolism	D.	Pulmonary embolism on 4th day. No peritonitis.
Yes	—	—	—	C.	Bowels open on 4th day.
Yes	—	Slight escape of fæcal matter during first few days	—	C.	—
—	Wedge	—	—	C.	Bowels open on 3rd day.
Yes	—	—	—	C.	Bowels open on 4th day.
Yes	—	—	—	C.	Bowels open on 5th day.
Yes	—	—	—	C.	—
Yes	—	—	Peritonitis	D.	Death on 6th day. Perforation and escape of fæcal matter at mesenteric border.
—	—	—	Intestinal obstruction	D.	On day following operation symptoms of intestinal obstruction. Wound and gut laid open to allow free escape, but patient died on 4th day. No peritonitis.
—	Wedge	—	—	C.	Colic on 2nd day; flatus passed on 3rd day; bowels open on 9th.

No.	Reference.	Operator.	Origin.	Age and sex.	Temporary compress.	Suture and material.	Length of gut removed.
13	Berlin. klin. Wochenschr., 1881, No. 20	Baum	Femoral hernia	F. 48	Forceps and fingers	Czerny	5⅞ inches
14	Deutsch. Zeitschr. für Chir., xv, pts. 3 and 4	Rydygier	A. anus followed blow in right ing. region	M. 46	—	Czerny, catgut, 40	2⅜ inches
15	Wiener Med. Presse, 1881, Nos. 17 and 19	Albert	Two fæcal fistulæ	M. 33	—	Two rows, very few in first row, catgut	2¾ inches
16	Wiener Med. Wochenschr., 1881, No. 37	Schinzinger	—	F. 47	Fingers	Lembert, 6 catgut, 6 silk	1⅛ inches
17	Ib.	,,	Inguinal hernia	F. 37	Fingers and a thin elastic band	12 catgut	2⅞ inches
18	Rydygier, Berlin. klin. Wochenschr., 1881, Nos. 41 and 43	Weiss	—	F. 23	Ligature	Lembert, invagination of upper end into lower, 20 silk	1⅛ inches
19	American Journal of the Med. Sciences, vol. liv, 1867, p. 105	Kinloch	Gunshot wound of gut	—	—	Invagination unsuccessful; 1 row of ordinary sutures, 3 Lembert	2½ inches (¼ upper, 2 lower)
20	Die Drainirung der Peritonealhöhle, S. 219	Bardenheuer	Ing. hernia, 14 days' standing	—	—	Czerny	Large
21	v. Langenbeck's Arch. f. klin. Chir., vol. xxvii, p. 277	Madelung	—	—	—	Czerny, 14 catgut	9 inches (upper 4, lower 5)
22	Ib.	Gussenbauer	Inguinal hernia	—	—	Czerny, 35 and 8 silk sutures	6 inches
23	P. Reichel, Deutsche Zeitschr. für Chirurgie, vol. xix, 1884	Reichel	,,	M. 35	—	Lembert, silk	—

Reposition.	Mesentery.	Persistence of fistula.	Cause of death.	Result.	Remarks.
Yes	Wedge	—	—	C.	Flatus on 2nd day; bowels open on 4th. Attack of parotitis during convalescence.
Yes	Mesentery split	—	—	C.	Flatus on 2nd day; bowels open on 8th. Pneumonia during course.
Yes	—	Fistula opened on 15th day; two others formed later; all healed spontaneously	—	C.	—
Yes	—	—	Collapse	D.	Very weak at time of operation. Vomited once. Gut completely healed.
Yes	—	—	—	C.	Flatus on 3rd day; bowels open on 13th.
Yes	—	—	Septic peritonitis	D.	Signs of obstruction. Death of peritonitis on 4th day.
Yes	—	Artificial anus reopened on 3rd day	—	C. not complete	Ligature through mesentery fixing bowel to abdominal wound. Artificial anus treated with Dupuytren's enterotome and improved.
—	Wedge	—	Fæcal extravasation	D.	Death on 9th day. Extravasation at mesenteric border.
—	„	—	—	C.	—
Yes	„	—	Internal strangulation	D.	Repeated attempts with Dupuytren's enterotome failed. Distension and vomiting; no sufficient action of bowels; no fever. Belly opened on 4th day; patient died 6 hours later. Strangulation by a peritoneal band, 5 inches below sutured spot.
Yes	Wedge; some difficulty with hæmorrhage	—	Septic peritonitis	D.	A length of gut loosened from mesentery, hence gangrene.

No.	Reference.	Operator.	Origin.	Age and sex.	Temporary compress.	Suture and material.	Length of gut removed.
24	P. Reichel, Dentsche Zeitschr. für Chirurgie, vol. xix, 1884	Reichel	Femoral hernia, wound of gut	F. 50	—	Lembert, silk	—
25	Ib.	„	Inguinal hernia	M. 61	—	„	6 inches removed at herniotomy
26	Ib.	„	„	F. 30	Fingers	Two rows, silk	1⅝ inches
27	Ib.	„	„	F. 34	„	Czerny, silk	5¼ inches removed at herniotomy
28	Ib.	„	„	M. 16	„	„	4 inches
29	Ib.	Fischer	Femoral hernia	F. 32	—	Lembert, silk	6 inches (3 from each end)
30	Ib.	„	Umbilical hernia	F. 61	—	Czerny	8 inches (4 from each end)
31	Centralblatt f. Chirurgie, 1881, No. 30	Socin	—	F. 65	—	Lembert, 14 sutures	—
32	Verhandl. d. Deutsche Gesellschaft f. Chirurgie, vol. ix	Tauber	—	—	—	—	14 inches

Reposition.	Mesentery	Persistence of fistula.	Cause of death.	Result.	Remarks.
—	Mesentery fixed by thread to wound	—	—	C.	Operation two months after herniotomy. Bowels open 3rd day.
Yes	—	Yes	—	R.; failure	Operation 4 months after herniotomy. Artificial anus re-established. Patient died a few months later from inanition. Failure due to stenosis and narrowing of lower end.
—	Wedge, sutured with catgut	—	—	C.	Slow course. Constipation. Operation 2½ months after herniotomy.
Yes	Wedge	Yes	Exhaustion	D.	Operation 5 weeks after herniotomy. Bowels open on 9th day. A fæcal abscess formed, and a fæcal fistula persisted until the discharge of a suture, then closed; but 3 months later a second abscess, followed by fistula. Stenosis at seat of suture: first abscess due to perforation above stricture; later a second perforation below, and hence temporary continuity of canal, later spoiled by contraction.
Yes	„	—	—	C.	Bowels open on 9th day. Omentum removed at herniotomy. Stump left in canal.
Yes	—	—	—	C.	4 inches excised at herniotomy. Operation for artificial anus 11 months later. Bowels open on 10th day. Subject to constipation after operation.
Yes	—	Yes, from 2nd day	—	R.; failure	6 inches of gut removed at herniotomy. Operation for artificial anus 2 months later. Signs of obstruction on 2nd day; sutures removed, and artificial anus re-established. Discharged with a fistula and subject to constipation. Died 1 year later with pneumonia.
Yes	Wedge	—	Septic peritonitis	D.	Lived 15 hours. Pulmonary emboli.
—	—	—	Peritonitis	D.	Stenosis of upper end of bowel.

No.	Reference.	Operator.	Origin.	Age and sex.	Temporary compress.	Suture and material.	Length of gut removed.
33	Centralblatt für Chirurgie, 1882, No. 21	Novaro	Inguinal hernia	M. 40	Ligature	Czerny, catgut	¾ inch
34	Ib., No. 41	Juillard	Femoral hernia	—	—	—	—
35	Ib.	„	Inguinal hernia	—	—	—	—
36	Deutsch. Med. Wochenschr., 1883, No. 1	v. Bergmann	Internal strangulation; enterotomy	M. 16	—	Czerny, 60 stitches	—
37	Ib., No. 15	Bardeleben	—	—	—	—	—
38	Deutsche Zeitschrift f. Chirurgie, vol. xix, 1884. P. Reichel	Fischer	Femoral hernia	F.	Fingers	Czerny, silk	2 inches
39	—	Makins	Inguinal hernia	M. 20	Forceps	Two rows outer Lembert, 50 silk	4 inches

Reposition.	Mesentery.	Persistence of fistula.	Cause of death.	Result.	Remarks.
—	—	—	Pneumonia; local peritonitis	D.	Mesentery freed 1¼ inches from gut (lower end). Stitches gave way which were put in mesentery.
—	—	—	—	C.	Bowels open on 8th day. Fistula had existed 2 years.
—	—	—	—	C.	Bowels open on 7th day. Artificial anus had existed 2 months. Lower end contracted to a pin's point, and lay free in belly.
—	—	—	—	C.	Bowels open on 10th day. Anus at junction of ileum and colon. Ileum sutured to lower end of colon in neighbourhood of vermiform appendix.
—	—	—	Peritonitis	D.	Not published; mentioned only in a discussion on subject.
—	Wedge	—	Collapse	D.	Herniotomy, 3¼ inches of gut resected, and artificial anus established; 19 days later operation to close it. Operation lasted 1¾ hours in cold room. Patient died on 3rd day. Pulmonary embolism. Clot in internal saphena and femoral; former ligatured close to latter.
Yes	„	—	—	C.	Hæmaturia for 2 days, commencing on 7th day, due to irritation from concentration of urine, as result of small amount of fluid taken.

No.	Source.	Operator.	Nature of hernia.	Age and sex.	Temporary compress.	Suture and material.	Length of gut resected.
1	Haller, Disputat. Anat. Göttingen, 1751, vol. vi, p. 745	Ramdohr	Inguinal hernia; abscess	—	—	Invagination	2 feet
2	Observat. et Remarques de Chir. prat., Mannheim, 1767, obs. x, p. 260	de Vermale, Redmond	Inguinal hernia	—	—	„	2 inches
3	Louis, Mémoires de l'Acad. Roy. de Chirurgie, 1757, vol. iii, p. 188	Duverger	„	—	—	3 stitches	2 inches
4	Haller, Bib. Chir., 1775, vol. ii, p. 457	Jos. Schmidt	„	—	—	—	6 inches
5	'The Anatomy and Surgical Treatment of Abdominal Hernia,' 2nd edit., London, 1827.	Astley Cooper	Femoral hernia	—	—	3 stitches	2½ inches
6	Ib.	„	Femoral hernia, rupture into sac	—	—	3 sutures, ends left out of wound	¾ inch
7	Ib.	Nayler	Inguinal hernia	—	—	—	4 inches
8	Handbuch der Chir., transl. by Textor, 1796	Boyer	„	—	—	Invagination, Ramdohr	4 inches
9	Journ. Gén. de Méd. et Pharm., 1810, t. xliii, p. 176	Lavielle, fils	Inguinal hernia, rupture	—	—	„	12 inches
10	Caspar's Wochensch. f. d. Gesammt. Heilk., 1836, No. 26	Dieffenbach	Femoral hernia	—	—	Continuous, Lembert	3 inches
11	v. Langenbeck's Arch. f. klin. Chir., xix, S. 410, 1875	v. Langenbeck	Inguinal hernia	—	—	Invagination, 8 catgut, Lembert's	8 inches
12	St. Petersburg Med. Wochenschr., 1879, No. 27, S. 253	Wahl	„	—	—	Lembert, 10 catgut	6 inches

for Gangrenous Hernia.

Mesentery.	Reposition.	Fæcal fistula.	Cause of death.	Result.	Remarks.
Wedge	Yes	—	—	C.	Bowels open on 2nd day. Sutured spot fixed to neck of sac. Died 1 year later from pleurisy.
—	—	—	—	C.	Sutured spot fixed to neck of sac. Slight discharge from wound 3 to 4 weeks. Bowels open normally.
—	—	—	—	C.	Ends joined over a piece of calf's trachea, which was discharged per anum on the 21st day.
—	—	—	—	C.	—
—	—	—	—	D.	An opening was left through which fæces escaped. No normal action of the bowels. Gut adherent to neck of sac.
—	—	8th day	—	D.	An artificial anus established itself on the 8th day. No action of bowels. Death occurred 2 months later from exhaustion and closure of artificial anus.
—	—	Yes	—	R.; art. anus remaining	Stitches removed on 2nd day after this escape of fæces by wound. On 10th day sutures replaced, but they again broke away.
—	Yes	—	Septic peritonitis	D.	Gut joined on a cylinder of cardboard. Death 6 hours after operation.
—	—	—	—	C.	Upper end of bowel fixed to wound; after evacuation of contents, 12 hours later, invagination and suture; gut kept fixed to wound. Bowels open on 2nd day.
Wedge	—	—	—	C.	Death 4 weeks later from internal strangulation.
—	—	—	Delirium tremens	D.	Suture line healed.
Wedge, 3 sutures	Not complete	—	Peritonitis	D.	Death on 7th day. Sutures efficient.

No.	Source.	Operator.	Nature of hernia.	Age and sex.	Temporary compress.	Suture and material.	Length of gut removed.
13	Die Drainirung der Peritonealhöhle, 1881, S. 218	Bardenheuer	Inguinal hernia, rupture	—	—	Czerny	—
14	Madelung, Langenbeck's Archiv, xxvii, p. 284	Küster	Inguinal hernia	—	—	Lembert, catgut	2 inches
15	Ib.	Gussenbauer	Inguinal hernia, rupture	—	—	Lembert, 19 sutures	7¼ inches
16	Ib.	Tändler	Femoral hernia	F. 52	—	10 sutures between serous and mucous coats	4¾ inches
17	Ib.	Billroth	„	M. 60	—	Two rows, 2nd Lembert	2 inches
18	Correspondenzbl. f. Schweize Aerzte, 1875, No. 5	Kocher	„	F. 45	—	Interrupted, not through whole thickness, 5 catgut	5¼ inches
19	Verhandl. Deutsch. Gesellsch. f. Chir., vol. viii, 1879, p. 83	Küster	„	—	—	Lembert, catgut	1⅝ inches
20	Ib.	„	„	—	—	Lembert, 1 continuous catgut	—
21	Wiener Medecin Blätter, 1876, Nos. 6 and 7	Nicoladoni	„	—	Polypus forceps, sheathed	Lembert, silk	—
22	Deutsch. Zeitsch. für Chirurgie, vol. xii, No. 3	Lücke	„	F. 54	Fingers	Invagination, modified Ramdohr	2⅜ inches
23	Bulletin de la Suisse, May, 1880	Kocher	Inguinal hernia	—	—	Lembert, 8 catgut	18¾ inches
24	Centralbl. für Chirurgie, 1880, p. 465	„	Femoral hernia, 2 days	F. 55	Billroth's large artery forceps	„	4¾ inches
25	Wien. Med. Presse, 1880, No. 23	Ludvik	Femoral hernia, 5 days	F. 60	—	Invagination, 20 catgut sutures	5¼ inches
26	Verhandl. Deutsch. Gesellsch. f. Chir., 1880, p. 64	Hagedorn	Femoral hernia, 2 days	F. 68	Provisional ligature with stout catgut	Lembert, close catgut	6¾ inches

Mesentery.	Reposition.	Fæcal fistula.	Cause of death.	Result.	Remarks.
—	Yes	Temporary	—	C.	Peritonitis. Abortion during course. Artificial anus formed, and healed up after 4 months.
—	—	—	Peritonitis	D.	Patient lived 8 hours.
Wedge	—	Temporary	—	C.	Fæcal fistula opened on 6th day; healed spontaneously on 14th.
—	Yes	—	Peritonitis	D.	Sac extirpated. On 5th day got out of bed and stole food. Death on 6th day. Gangrene of gut in neighbourhood; all sutures had given way.
—	—	Temporary	—	C.	Small fæcal fistula closed spontaneously 3 weeks after operation.
Wedge	Yes	„	—	C.	Resection 1 day after herniotomy. Small fæcal fistula opened on 8th day; closed on 14th.
„	Yes	—	Septic peritonitis	D.	Collapse on 2nd day. Two stitches gave way, and extravasation occurred.
—	Yes	—	„	D.	On drawing on gut immediately after operation sutures gave, and extravasation into peritoneum occurred.
—	Yes	—	—	C.	Drainage to neck of sac. 6th day simple enema.
—	Yes	—	Septic peritonitis	D.	Herniotomy. Resection on 8th day. Narrowing of lumen due to method, found P.M.
—	Yes	—	—	C.	Flatus passed on 2nd day; bowels open on 12th.
—	Yes	—	Septic peritonitis	D.	Flatus passed on 3rd day. Fæcal abscess at line of suture; gangrene of gut extending $4\frac{3}{8}$ inches above suture.
Mesentery pleated	Yes	—	—	C.	Sac and omentum excised. Bowels open on 4th day.
—	Yes	Temporary	—	C.	Fæcal fistula from 5th day; protracted cure in water bath.

No.	Source.	Operator.	Nature of hernia.	Age and sex.	Temporary compress.	Suture and material.	Length of gut removed.
27	Verhandl. Deutsch. Gesellsch. f. Chir., 1880, p. 64	Hagedorn	Femoral hernia, 36 hours	F. 40	Provisional ligature with stout catgut	Lembert, close catgut	2 inches
28	Deutsch. Medecin Wochenschr., 1880, S. 558	Heusner	Inguinal hernia, 8 days	F. 73	—	Invagination, 10 catgut	4⅜ inches
29	Berlin. klin. Wochenschr., 1880, Nos. 45—48	Czerny	Femoral hernia, 3 days	F. 43	Fingers	Czerny, 24 silk	4⅜ inches
30	Ib.	„	Inguinal hernia	F. 49	„	Czerny	2¼ inches
31	Wiener Med. Wochenschr., 1881, No. 5	Wölfler	Femoral hernia, 2 days	F. 65	„	2 rows, 25	6⅜ inches
32	Prezeglad Lakarski, 1881, Nos. 22 and 23	Bryk	Fem. hernia, 10 days, rupture	F. 36	—	Lembert	5¼ inches
33	Ib.	„	Inguinal hernia	M. 29	Sheathed forceps	„	5¼ inches
34	Berlin. klin. Wochensch., 1881, No. 29	Roggenbau	Femoral hernia	F. 74	Fingers	Czerny, silk, 11 first row, 10 second	14⅝ inches
35	Centralbl. f. Chirurgie, 1881, No. 24	Juillard	—	—	—	Invagination and Lembert, 13 catgut	6⅜ inches
36	Samml. klin. Vorträge, No. 201	K. Jaffe	Littre's hernia	F. 52	—	Oblique section of smaller end; Czerny, 24 catgut	5¼ inches
37	Berlin. klin. Wochenschr., 1881, No. 43	Rydygier	Femoral hernia, 3 days	F. 58	R.'s elastic pylorus compressor	Czerny, catgut	24 inches
38	Ib.	Weiss	Femoral hernia, rupture	F. 47	Provis. ligature	Lembert, 10 supf., fine silk	4⅜ inches
39	Centralbl. f. Chirurgie, 1881, No. 46	Moldenkow and Minin	Inguinal hernia, rupture	M. 21	—	Lembert, 25 catgut	—
40	Ib., No. 52	Roser	Femoral hernia	—	—	Two rows	—

Mesentery.	Reposition.	Fæcal fistula.	Cause of death.	Result.	Remarks.
—	Yes	Temporary	—	C.	Fæcal fistula on 6th day; closed spontaneously.
Wedge	—	—	Septic peritonitis	D.	Fæcal extravasation; stitches loose.
Wedge, 6 sutures	Yes	—	—	C.	Flatus passed 1st night; bowels open on 8th day. Neck and sac extirpated.
—	—	—	Asphyxia	D.	Fæcal vomit inspired during anæsthetisation.
—	Yes	—	Septic peritonitis	D.	Probable escape of fæces on drawing loop down. Sutures efficient, but some stenosis. Patient lived 6 hours.
—	Yes	—	—	D.	Lived a few hours only.
—	Yes	—	Carbolic acid poisoning; inflammation of lungs	D.	Lived 7 days; continual vomiting. Bowels open on 7th day.
—	Yes	—	—	C.	Bowels open on 5th day.
Wedge, 14 sutures	—	—	—	C.	Bowels open on 8th day. Patient a lunatic.
Wedge, 10 sutures	Yes	—	—	C.	Excision of sac, suture of neck. Bowels open on 4th day.
—	Yes	—	Septic peritonitis	D.	Lived 20 hours. No escape of fæces. Bowels open with enema.
—	Yes	Yes	Exhaustion	D.	Died one month later.
Ligature *en masse*, in 5 loops, incision	Yes	—	—	C.	Extirpation of sac. Bowels open regularly from 3rd day.
—	Yes	—	Valve at sutured spot	D.	—

No.	Source.	Operator.	Nature of hernia.	Age and sex.	Temporary compress.	Suture and material.	Length of gut removed.
41	Deutsch. Zeitschr. f. Chir., X. Reichel, vol. xiv, p. 232 *et seq.*	Fischer	Lumb. hernia 5 days; ruptured during op.	F. 56	—	Lembert silk	9¼ inches
42	Ib.	Reichel	Femoral hernia, 6 days	F. 55	—	Lembert	2 inches
43	Ib.	„	Inguinal hernia	F. 47	Fingers	„	2¾ inches
44	Ib.	„	Inguinal hernia, 3 days	M. 35	„	„	17 inches
45	Deutsch. Medecin. Wochenschrift, 1877, No. 10	Viertel	Femoral hernia	F. 56	—	Lembert, 15 silk	1¼ inches
46	Hygeia, xliii, 12	Aman	„	F. 63	Provisional ligature	Czerny, 16	—
47	Medical Record, 1882, vol. xxii, No. 16	Fulles	—	—	—	—	—
48	Ib.	„	—	—	—	—	—
49	Deutsch. Medecin. Wochenschr., 1883, No. 15	Bardeleben	—	—	—	—	—
50	Ib.	Bardeleben	—	—	—	—	—
51 52 53 54 55	Berlin. klin. Wochenschr., 1881, No. 43, Rydygier	Obalinski 3, Korzeniowski 1, Kosinski 1	—	—	—	—	—

Mesentery.	Reposition.	Fæcal fistula.	Cause of death.	Result.	Remarks.
—	Yes	—	Septic peritonitis	D.	Escape of fæcal matter into belly during operation; disinfection.
Wedge	Yes	—	,,	D.	Death on 3rd day. Artificial anus not established on account of smallness of opening. Rupture into sac. Omentum removed. Sac extirpated. Carboluria.
,,	—	—	—	C.	Bowels open on 4th day. Gut only gangrenous in ring exactly opposite neck.
—	Incomplete	Yes	—	R. Incomplete	Gut not wholly replaced, because adherent in canal. Gut ruptured during manipulation. Pain and vomiting 1st night; fæcal on 3rd day. Wound opened; gut punctured above suture and fæces evacuated. Later fæces escaped, partly by wound, partly per anum.
Wedge	Yes	—	—	C.	Provisional fixation of both ends to wound. Wound left open.
Wedge. sutured in 2 layers	—	—	Septic peritonitis	D.	Died in 17½ hours. Suture firm.
—	—	—	—	C.	—
—	—	—	—	C.	—
—	—	—	Septic peritonitis	D.	Death in 36 hours.
—	—	—	,,	D.	Death in 36 hours.
—	—	—	—	D. D. D. D. D.	Verbal communication to Rydygier. No particulars given.

MEDIASTINO-PERICARDITIS IN CHILDREN.

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In the spring of 1882 a boy was admitted into one of my wards, in the Manchester Children's Hospital at Pendlebury, suffering from enlarged liver and ascites.

The cause of this enlargement of the liver was not obvious; on the contrary it was so obscure that several doctors to whom I showed the case failed to arrive at any satisfactory diagnosis; and it was only after repeated examination that I satisfied myself that some mediastinal growth existed, causing obstruction to the return of the blood from the liver and so giving rise to the ascites. What the exact nature of this growth was the post-mortem examination revealed to me.

I showed the organs from this case at a meeting of the Manchester Medical Society, and Dr. Leech and my colleague, Dr. Ashby, mentioned two similar cases which had been under their care. To their courtesy I am indebted for leave to bring them forward with my own.

The first in order of time is that of a girl, æt. 13, a patient of Dr. Leech's at the Manchester Royal Infirmary. The following are brief notes of her case:

Sally H—, æt. 13, previously in good health; had scarlatina when eight years old. Ten months before admission began to

suffer from pain in left side of chest, shortness of breath and cough, followed a month later by frequent vomiting and spitting of blood. Two months later dropsy of the arms and legs appeared, followed by ascites, the œdema of the extremities soon passing off. Except for one attack of diarrhœa the bowels were regular and there was no jaundice. Urine at times scanty.

On admission, child fairly nourished; expression careworn; cheeks congested, considerable cyanosis of face generally; abdomen distended with fluid; liver hard and large, dulness extending five inches and three quarters in nipple line; spleen not enlarged. Veins prominent over chest and abdomen, blood flowing equally well upwards and downwards. No œdema of face or limbs. Heart, apex beat felt in fourth space just within nipple, area of dulness not obviously increased, first sound reduplicated at base. No fulness of veins of neck. Pulse regular, small, compressible, weaker on left than right. Physical signs of phthisis in second stage in both lungs. Dyspnœa on exertion.

During her stay in hospital she improved in general health. The ascites never subsided and she was tapped six weeks after admission, $5\frac{1}{2}$ pints of greenish fluid being withdrawn. Four months later $17\frac{3}{4}$ pints were drawn off. Fluid also accumulated at bases of both pleural cavities, but more in right than left, and at times both the legs and hands and tissues of the back became œdematous.

The area of the heart's dulness increased so as to extend to the right of the sternum and to the left nipple line, and the impulse became more widely diffused, being felt well to left of nipple.

Occasional attacks of vomiting occurred and at one time there was slight jaundice visible in the conjunctivæ.

The liver did not increase further and at no time was there any pain.

Seven months after admission, while walking in the hospital garden, she was seized with convulsions, and died suddenly.

The post-mortem examination revealed, besides pulmonary phthisis, extensive mediastino-pericarditis, causing obstruction to the return of blood from the liver and great enlargement of that organ.

The second case is that of Cornelius H—, a boy of 6¼ years, who was admitted to the Pendlebury Children's Hospital under Dr. Ashby's care in May, 1880, with the following history :— Six months previously he had had scarlatina, from which he appeared to recover completely; three months later œdema appeared in the feet and face, followed some time later by swelling of the abdomen. He had passed water frequently, but in small quantities, the bowels had been confined, and the appetite variable. He had suffered much from dyspnœa, especially at night, and had a bad cough.

On admission there was general dropsy and ascites, slight cyanosis and congestion of bases of both lungs. The liver was greatly enlarged, reaching from the level of the fourth rib in the midsternal line nearly to the level of the umbilicus in the right nipple line. There was no displacement of the heart, and the sounds were clear and normal both at apex and base. The spleen was not enlarged. He improved for a time under the influence of jalap, but when he left the hospital in August the fluid was steadily increasing in amount.

Towards the end of September in the same year he was admitted to the Royal Infirmary under Dr. Leech. There was then much ascites and some œdema of face, feet, and back, and slight œdema over the cardiac area. Veins of neck full and pulsating, especially on left side, and veins of face and abdomen unduly prominent. Area of heart's dulness extended from second to upper border of fifth rib and for three inches and a half transversely. The position of the apex beat could not be made out, the sounds were rapid and sharp like the ticking of a clock, and a peculiar click followed the second sound over the ensiform cartilage. Pulse rapid, 136, small and compressible. Respiration rapid and shallow ; some fluid at left base. The urine contained no albumen. The boy suffered from cough and dyspnœa.

By the end of October he had so far improved under the influence of rest, vapour baths, &c., as to be able to be sent to a convalescent institution, where, however, he shortly afterwards died. The post-mortem examination in this case also showed that the ascites was due to obstruction to the return of blood through the enlarged liver, which, in its turn, was due to the mediastino-pericarditis.

The third case was under my own observation in the Children's Hospital off and on from May, 1882, until his death, which occurred on June 30th, 1883.

The following is an abstract of the notes of this case:

Joseph I—, æt. 10, family history good; no syphilis; three other children living, none have died; was in good health until fourteen weeks ago, when veins of chest were noticed to be swollen; two weeks later he had a cough and became feverish, and, though no rash was seen, he probably had scarlatina; the three others all had it undoubtedly. Two weeks later the face and abdomen swelled and the urine became scanty; bowels regular, sometimes relaxed; for last three days the feet have been swollen. Admitted May 3rd, 1882, well-developed, weak-looking boy; drowsy, restless; face slightly cyanotic, not œdematous; some œdema of feet and legs and skin of back and abdomen; veins of face, neck, and chest enlarged; fingers a little clubbed; no enlarged superficial glands. Abdomen enlarged and prominent, with some fluid in lower part. Liver enlarged, hard, and smooth; dulness extends 6½ inches. Spleen not enlarged. Heart-sounds powerful; second reduplicated at base, otherwise normal; dulness absolute to third space, and above this there is partial dulness over left side of sternum and second and third costal cartilages; pulse small and compressible; urine contains a faint trace of albumen, very scanty.

June 12th.—Abdomen more distended; urine remains scanty, with a trace of albumen; there is dulness (fluid) at base of right lung.

17th.—Abdomen tapped with Southey's trocars and 28 oz. of serum drawn of; urine more abundant afterwards for a few days.

July 4th.—Tapped again, 35 oz.

August 3rd.—Irritable cough with laryngeal tone; urine more abundant, 25 to 40 oz. daily lately.

September 15th.—More cough and dyspnœa; more fluid in right lung; 27 oz. clear serum withdrawn from right pleura; great relief of symptoms.

October 5th.—Abdomen tapped, 3½ pints of clear serum withdrawn.

November 1st.—Has complained of pain in region of liver; abdomen more distended; œdema of legs, &c., more general.

Liver larger, 7½ inches. Heart, dulness over second and third spaces rather more extensive; tapped again, 35 oz.

Discharged on December 17th.

Readmitted December 27th.—Ascites and œdema of legs greatly increased; face puffy and very dusky; breathing weak, 26; pulse weak, 104; temperature subnormal as usual, and irregular; the child is in great distress, very restless, and coughing much; 7½ pints of clear serum drawn off by Southey's trochars. From this time to the time of his death, on June 30th, he steadily got worse, and the tappings had to be repeated on January 7th, 14th, and 30th, February 16th and 27th, March 8th and 22nd, April 7th, May 18th and 28th, in all, 84½ pints removed from December 27th to May 28th; the liver increased slightly, as did also the heart dulness; the urine remained very scanty. During the last few days he was almost unconscious, and had at times slight convulsions, mainly of left side; the pulse latterly became weaker during inspiration; no change occurred in the heart-sounds; bowels kept open by jalap, &c.; temporary relief was afforded by jaborandi and digitalis; alkalies, iodide of potassium, &c., gave no result.

Post-mortem.—Body much wasted; legs and scrotum and skin of abdomen and back very œdematous.

Thorax.—Left pleura adherent throughout; no fluid; lung congested, crepitant; lower part fleshy; bronchi hard and thickened; right, half pint serum in pleura; lung compressed into upper and posterior part and adherent there between the lobes by old œdematous adhesions; lung crepitant, but congested and very tough, with small patches of emphysema; bronchi as on left. In mediastinum are several small glands and one nearly an inch and a half long; they are pale and somewhat translucent; none are caseous; these glands are matted together with much fibrous tissue, forming a large mass surrounding the trachea and great vessels, running up as high as the upper border of clavicle and somewhat further on left, and compressing the great vessels, especially the inferior vena cava.

Heart.—The parietal pericardium is adherent to all its surroundings and to the visceral layer throughout, where it covers the left ventricle and the border of right; it is immensely thickened, and almost cartilaginous; right side walls thin and

flabby; auricle enlarged, contains much dark clot; valves normal; inferior vena cava very large and thickened; some yellow discolouration of lining of it and pulmonary artery; much dark clot in ventricle; left side, auricle nearly empty and rather smaller than right; some discolouration of walls; veins generally very large; ventricular wall firm, pale, and not much hypertrophied; mitral valve competent, but red and with thickened edges; aortic healthy; no communication between the right and left sides; aorta thickened and yellow, but not hard or rough.

Abdomen contains some serum. No peritonitis.

Liver very large; surface uniform and smooth; capsule thick; venous congestion intense; when removed from the body the blood streams from it and again drips from it, as from a sponge, when cut into, the bloodless section becoming dull yellow brown in colour, flabby and tough; the hepatic veins are very large and their walls thickened; weight (after escape of much blood) 27 oz.

Spleen tough, congested, with appearance of sago grains, giving no iodine reaction.

Kidneys large, congested, and very hard; capsules slightly adherent; lining of calices white and thickened; cortex not wasted; papillæ very prominent and hard; much increase of fibrous tissue throughout. No iodine reaction.

Microscopic examination of liver showed great increase of fibrous tissue around the portal vessels, with multiplication of bile ducts and slight cirrhosis of the hepatic vessels. The intervening capillaries were so immensely dilated as to give to the section the appearance of a blood-containing sponge.

Viewed in the light of the foregoing cases the two following seem to be of interest. Both were under treatment in Dr. Ashby's wards in 1878 and 1879, but as they left the hospital relieved and have since been lost sight of, the diagnosis was not verified by a post-mortem examination.

E. B—, a boy, æt. 12, admitted September, 1878, marked history of phthisis in family. No history of any previous illness. One year ago abdomen began to swell and micturition was difficult but not painful. The swelling has continued to

increase, but there has been no œdema elsewhere. Urine often milky looking, bowels regular, appetite good.

On admission, florid, well nourished; teeth large and broad; superficial glands not enlarged. Abdomen large, bulging in flanks, contains much fluid. Liver very large, hard, with rough and nodulated margin, measures six inches in nipple line, four inches in middle line of body. Spleen not enlarged. Superficial veins enlarged from groins to thorax; external jugular dilated, fills from below. Pulse 88, small, and weak; apex beat cannot be localised, impulse diffused; second sound of heart reduplicated at left base. Breath-sounds weak but normal, no dulness over lungs; slight cough, no dyspnœa. No jaundice, stools normal; urine contains neither albumen nor bile. From eight to sixteen grammes of urea passed daily.

After being in hospital for five months he was discharged, the physical signs remaining unaltered.

Patrick B—, æt. 11, admitted March, 1879. No history of syphilis, drink, or rheumatism. Measles when three years old. Two and a half years ago he was ill for six weeks with sickness, pain in shoulders, breast, and sides, and some rash (?) on legs. Never well since. Sixteen months ago he began to have pain and swelling of the abdomen with occasional cough.

On admission he is thin; skin dry and harsh; lips and cheeks rather blue; teeth short, broad, and not notched. Superficial glands not enlarged. Legs œdematous. Abdomen large, distended with fluid, walls tense. Liver greatly enlarged, felt below ribs and in epigastrium, dulness extending upwards to above the nipple. Spleen not obviously enlarged. Heart, impulse feeble and indistinct, felt at about the level of the nipple; sounds muffled, no bruit. Veins of abdomen distended, external jugulars large and pulsating, filling from above. Some loss of resonance at bases of lungs, with râles and scanty rhonchus; much mucous expectoration; dyspnœa on lying down. Urine clear, contains no albumen.

From this time until his discharge in February, 1880, he was from time to time tapped with great temporary benefit. In the intervals he was up and about, playing cricket in the garden, and apparently in good health and spirits. In all about 150 pints of greenish fluid were removed.

On his discharge he was, except for the ascites, in fairly good health.

Remarks.—The most prominent feature in all these cases was ascites dependent immediately upon obstruction to the flow of blood through an enlarged liver.

Since ascites is very rare in children and is, in almost every case, associated with tuberculosis of the abdominal organs, any group of cases in which it occurs without this association of tuberculosis must be both of clinical and pathological interest.

The diagnosis was in each case difficult. The possible causes of the enlargement of the liver seemed to be: (1) syphilis; (2) lardaceous degeneration; (3) hydatid cysts; (4) alcoholic cirrhosis; (5) valvular disease of the heart; (6) new growth (sarcomatous); (7) mediastino-pericarditis. Some of these may easily be eliminated.

1. Of syphilis there was in no case any history, nor did anything in the appearance or teeth lend any colour to such a suspicion, and in the case of Joseph I— antisyphilitic remedies were given without producing any favorable change.

2. In one case only did any possible cause of lardaceous degeneration exist, viz. phthisis in Sally H—, and in her case the disease appeared to have existed for only two months previous to the appearance of ascites. Moreover, in no case was there any accompanying enlargement of the spleen.

3. Against the theory of hydatid cysts were the residence of the patients, none of whom had ever been out of England, the uniformity of the enlargement, and, in common with all other purely local causes, the signs of obstruction to the return of blood to the heart from parts other than the abdomen.

4. Besides the absence of any history of alcoholism the normal condition of the spleen and the presence of venous congestion in the neck and thorax forbade the belief that alcohol had been the agent at work.

5. Though the symptoms pointed strongly to valvular disease of the heart, and though the enlargement of that organ also favoured this view, yet at no time was a murmur heard in any of the cases.

Rheumatism is specially noted as being absent in Sally H—'s case, and in the others the notes are silent upon the subject.

6. The diagnosis then lay between a new growth and general inflammation of the mediastinal glands and connective tissue.

Whatever the nature of the growth might be, it was obviously not merely a local development in the liver, but something which was able from its position to press upon both the inferior and superior vena cava. It must therefore have covered a considerable area and been situated in the posterior mediastinum.

Had such a mass been sarcomatous the enlargement of the heart's area in the cases in which it was noted must have been mainly due to hypertrophy of the heart itself, as there was no evidence of displacement of the organ, and this would not have agreed with the diffused and weak impulse, the short feeble heart-sounds, and the weak pulse. On the other hand, in those cases in which no such enlargement was observed, it would scarcely have been possible for a tumour to have existed for so long a time and to have produced such severe symptoms without manifesting its presence by increase of dulness in the cardiac area and hypertrophy of the heart. Moreover, except at the very commencement of the disease in Sally H— and Patrick B—, there was no pain referred to the thorax and at no time in any of them were there symptoms of pressure on the sympathetic or recurrent laryngeal nerves. These considerations led me, in the case that came under my own observation, to incline to the view of its being a general inflammation of the mediastinal glands and fibrous tissue.

The pulsus paradoxus, upon which so much stress has been laid and which was so marked a symptom in the cases of mediastinitis mentioned by Gerhardt, Wiedemann, Kussmaul, and Riegel, was only observed in the case of Joseph I—, my note being, "The pulse latterly became weaker during inspiration."

I only have complete notes of the post-mortem of Joseph I—, and can therefore say nothing as to the exact anatomical conditions in Sally H— and Cornelius H—, nor explain the absence of a symptom so prominent in the other recorded cases.

In Joseph I— it appeared to me that the adhesions were so universal and the lungs themselves so tightly bound down at the root to the back of the chest that in inspiration it was

impossible for any very great traction or compression to be exerted upon the aorta. The chest movements were also much impaired. Wiedemann records a case of direct adhesion of the great vessels to the back of the thorax in which the radial pulse became obliterated, and the aorta and other vessels narrowed by pressure from pericarditis. Kussmaul's appear to have been cases of ordinary adherent pericardium, and in them the pulsus parodoxus was well marked, though there was no general mediastinitis.

In their mode of onset again these cases were peculiar. In only two, viz. Sally H— and Patrick B—, was there any history of pain or distress, such as might occur during an attack of pericarditis; and in none of them was there any history of rheumatism. Whether or not the occurrence of scarlatina immediately before or at the commencement of the disease in two cases certainly, and probably in three, was a mere coincidence I cannot pretend to say. So far as the character of the urine was any guide, the absence of albumen, except for a trace in Joseph I—, certainly did not favour the view that scarlatina had played an important part.

Treatment, so far as my case was concerned, did certainly prolong life and add to the patient's comfort, but this is the most that can be said.

By mechanically removing the fluid relief was obtained and death averted, but no impression was made upon the disease, which progressed steadily to the end.

Possibly something more might have been done had the case come under observation earlier. It is in the hope that, by calling attention to the subject, more light may be thrown upon the etiology of this disease that I have ventured to bring forward these examples of it.

HAMMAM R'IRHA,

A WINTER HEALTH RESORT.

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The want that has long been felt of a good bath station to which rheumatic invalids can be sent in the winter months, induces me to give a brief account of Hammam R'Irha, in Algeria; a place which, if it be not all that can be desired, certainly has its merits. It has already been brought under the notice of the profession in England by Mr. Pollock[1] and by Dr. Lauder Brunton,[2] both of whom speak of it in very high terms. I have twice visited Hammam R'Irha. In December, 1879, I went over from Algiers as a tourist, and in March, April, and May of this year I was there to take the baths.

The bath stations in other countries for the treatment of the manifold forms of rheumatism in the summer and autumn months are too numerous to mention; but it is difficult to find a place suitable for the winter and early spring, because it is essential to the successful taking of all baths that there should be warm, dry weather; and these conditions occur in most localities at a season when rheumatic invalids feel the English climate least. One would naturally look for such weather in winter along the northern shores of Africa, where the fierce sun,

[1] 'Lancet,' March, 1881.

[2] 'Practitioner,' April, 1881, and November, 1882.

clear sky, and neighbouring desert should combine to this end. And, in point of fact, Algeria as a whole presents a winter climate which is almost unsurpassed. There are long intervals without a drop of rain, and the northerly winds are tempered by passage across the Mediterranean. The mean winter temperature of its chief town is 58·4° F.,[1] and the average number of days per annum on which rain falls is about 80. It has also the additional attractions of beautiful scenery and an interesting race of people. The three ranges of Atlas mountains stretch from east to west, nearly parallel to, and on an average about 50 miles from, the coast; and Hammam R'Irha is situated in a dip of the Lesser Atlas range, 2000 feet above the sea level.

Although in the present day but little known, these baths were valued by the Romans, who built the village of Aquæ Callidæ beside the springs, remnants of which and of their baths are yet to be found. In more recent times they have been extensively used by the Arabs, who still make long pilgrimages to them with their wives and families, and who regard it as a part of their religion to have at least one good cleansing a year. They have their own baths just below the other establishments, and set lighted tapers and flags round the walls at certain Mahommedan festivals.

Hammam R'Irha is almost due south of London, and, as the crow flies, about 1100 miles. The quickest way to get there (three days without stopping) is by Marseilles and Algiers, which entails thirty-six hours' sea-passage. The baths are about sixty miles west south-west of the latter place, and about four and a half-hours' journey, first by train to Bou Medfa, and then a pretty drive of eight miles. There is another way with less sea through Spain, by Malaga or Carthagena through Oran; and a third way, with seven or eight days' sea voyage, by British India steamer from London to Algiers. Invalids should take the first or third. The cost without stopping at Marseilles or Carthagena, is about £14; all the way by sea to Algiers about £12.

The bathing establishments are situated on the southern side of a hill and command a beautiful and extensive view. Below, the valley of Oued-el-Hammam (river of the bath) runs east

[1] Calculated from the Government observations of thirteen years, 1865—77.

and west. On the opposite side of this is the little hamlet of Vesoul-Benian, and stretching away in the distance beyond are two ranges of hills. On the west the rugged mountain Zakkar, which dominates all this region, towers to the height of 5184 feet above the sea level; while to the east, the valley expands into a well-cultivated basin, beyond which the high peaks of Ben Chicao and Berouagia can be seen. About two kilometres to the north-west is a pinewood, said to be eighteen hundred acres in extent, and this emits a most agreeable odour on warm days. On the sides of the hills around flourish the ash, oak, olive, and eucalyptus trees; in well-sheltered places the orange can be grown to some extent, and roses, geraniums, and violets bloom all through the winter.

It will be seen from this description that the place is more or less protected on all sides by mountains, but unfortunately there is a cleft between Mount Zakkar and the pine wood on the north-west; and the north-west wind is the stormy wind of Algeria, being relatively fierce, cold, and rainy—corresponding in some respects with the south-west wind on our south coasts—and sometimes it sweeps down this cleft in such a bleak way that you fail to recognise the warm sunny places of a few days previous.

There are four almost distinct buildings for utilising the mineral waters, situated near together. Firstly, there is a small hospital founded by the French military authorities in 1841 for the reception of invalid soldiers. About two hundred yards to the east of this are the original baths still used by the Arabs and Jews, adjoining and above which is the small hotel built in 1878 by M. Arlès Dufour; and, lastly, there is the large new hotel about one hundred and fifty yards higher up the hill, part of which is finished and habitable, under the superintendence of the same gentleman. Great credit is due to the energy and enterprise of M. Dufour, and one can only wish him success in his extensive undertaking. As yet, however (June, 1884), the arrangements are not complete. So much of the benefit to be derived from a course of treatment at a bath station depends on the immediate surroundings and comforts of the invalid, apart from the bath itself, that one can scarcely over-estimate the importance of these adjuncts, and things, no doubt, will get straight in due time.

Of course, one cannot expect to find, so far from home, the

gaiety of the fashionable German and French baths, with their casinos, theatres, and bands, but it is a great thing to find a winter climate for the invalid, and there are several nice excursions and rambles in the country around. For healthy friends and companions there is a tennis court, and lovers of the chase will find some sport on the surrounding hills and fish in the river. The cost of living comes to about fifteen or sixteen francs a day at least. It is well to write for a south room with a fireplace beforehand.

After careful search I have not been able to find a record of any meteorological observations made at Hammam R'Irha; but Dr. G. H. Brandt, who was resident physician last winter, made a series of careful notes, and through his kindness I am able to publish, for the first time, the following *résumé:*

Weather at Hammam R'Irha Nov. 15 *to March* 31, 1883-4.

	Maximum.	Minimum.	Fine days.	Cloudy.	Rainy.	Total rain.
Nov. 15—30	79·7°	39·2°	10	5	5	11 inches.
December .	63·5°	29° (2 days)	13	18	8	3½ inches and 3 showers.
January . .	68·9°	36·5°	21	6	6	3 „ 2 „
February . .	71·6°	39·2°	16	13	5	2⅓ „ 3 „
March . .	69·8°	31·1°	11	20	12	10⅓ „ 3 „

NOTE.—In December, one day snow until 2 p.m, 4 inches; two nights below freezing. In January, one day thick fog. In February, one day drizzle all day, two days sirocco. In March, four days rain all day, six days cold wind, one day sirocco. Temperatures Fahrenheit scale, and read in the shade about six feet above the ground.

This table gives us some valuable data, and represents, I believe, on the whole, a fairly typical winter, although the seasons vary considerably. It will be noticed that the thermometer dropped below freezing point on three occasions, and that snow fell thickly once; but frost and snow are exceedingly rare. The changes of temperature at sundown are not so sudden as they are in the south of France, and the mean night temperature is generally 5° C. less than the mean day. What

the absolute mean temperature was last winter I have not yet been able to ascertain, but it is probably below that of Algiers by some 6° or 7° F.[1] Out of a total of 137 days, 71, or rather more than half, were quite fine, and there were only 37 really wet days; nevertheless, over thirty inches of rain fell in these four and a half months, showing that the rain was heavy when it did fall, as is usual in sub-tropical climates; but its position on the side of a hill and the porous soil prevent Hammam R'Irha from being a damp place. The sirocco, or desert wind (south-east), is of course occasionally felt, but it gives rise to very slight inconvenience; its terrors are reserved for the summer.

Perhaps the greatest charm of this climate rests in the purity and bracing character of its air. It strongly resembles the mountain air of Scotland in the summer months, only there is less wet. When the north-west wind blows there is quite as much need of an overcoat as in Scotland, but not at other times. Invalids should take great care during the prevalence of this wind. The safest time to take the baths in an average season would be from October 1st to December 30th, and from March 1st to May 30th. The intervening months of January and February may well be spent in Algiers or its suburb Mustapha Supérieur.

All the water in the district is hard, but there are two valuable mineral springs at Hammam R'Irha. The chalybeate spring for drinking rises about three quarters of a mile to the east of the bathing establishment. It is quite cold, clear, inodorous, and very pleasant to drink. Its chief active principle is oxide of iron held in solution by carbon dioxide, and it sparkles with bubbles of this gas when freshly drawn. It also contains a quantity of sulphate and bicarbonate of lime. The following is the detailed analysis of the solids contained in one litre of the water, made by M. Morin, the Government analyst:[2]

[1] Since this paper has passed through the press, I have received fuller details of Dr. Brandt's daily observations, from which I calculate the following results:—Mean daily temperature for the winter 1883-84, from November 15th to April 15th, 11·14° C. (52·05° F.); mean daily temperature for the last half of November 13·4° C. (56° F.); for the month of December 9·3° C. (48·7° F.); for the month of January 9·4° C. (48·9° F.); for the month of February 12·3° C. (54·1° F.); for the month of March 10·9° C. (51·7° F.); for the first half of April 11·1° C. (52° F.).

[2] Quoted by Dr. E. Renard in his 'Station Thermale d'Hammam R'Irha,' 1880, p. 21.

Acide carbonique, libre	0·8820
Bicarbonate de chaux	0·9411
„ de magnésie	0·0314
„ de strontiane	Indices.
„ de manganèse	0·0008
„ de peroxide de fer	0·0100
Sulphate de chaux	0·5438
„ de magnésie	0·1623
„ de soude	0·3425
Clorure de sodium	0·2801
„ de potassium	Indices.
Silicate de soude	0·0240
Alumine	0·0020
Matières organiques azotées	Traces légères.
Arsenic et acide phosphorique	Traces.
Ensemble	3·2200

Peroxide of iron constituted 39·8 per cent. of the solids dried at 100° C.

The other spring rises just behind the hotel, and is used almost solely for bathing purposes. It is generally about 58° C. (136° F.) at the source, but by the time it reaches the baths is cooled down to 44—45° C. (110—113° F.). The supply is constant and abundant, and this water is also clear and colourless, but to a very delicate sense it has a slight sulphurous odour, more distinct at some times than at others. On this account it was formerly affirmed that the medicinal properties of the baths were due to sulphur, but it has now been proved[1] that the odour is due to the presence of barégine and sulfuraires, low forms of vegetable life about which very little is known, but which are frequently found in hot mineral springs, and have given rise to the same mistake before. They belong to the same class of organisms as those described by Mr. A. W. Bennett in another part of these 'Reports,' and it is significant that this water—like the water in which the *Beggiato alba* is often found—contains an excess of sulphates but no sulphur or sulphides.

Chemically this spring belongs to the large class of calcareous or earthy waters, its chief constituents being sulphate and carbonate of lime. The following is the analysis of the solids in one litre of water:

[1] *Vide* op. cit., p. 29, *et seq.*

Carbonate of calcium	·207
„ magnesium	·030
Sulphate of calcium	1·303
„ magnesium	·172
„ sodium	·017
Chloride of „	·439
„ potassium	·091
Silicate of sodium	·069
Alum	·002
Peroxide of iron	Traces.
Total	2·330

The baths are taken either in one of the small bathrooms, or in a swimming bath (piscine). In the former case the temperature can be accurately adjusted, and douches, hot and cold, are provided. The temperature of the water in the piscines is 112°, and it may be thought that this is too hot, but it is quite supportable, and a stay of five to fifteen minutes permissible, if the heart be healthy and the entrance into the bath gradual. In either case, lying down afterwards under blankets for twenty to thirty minutes is an essential part of the treatment. After coming out of the bath the skin is reddened, and profuse perspiration follows. This effect is heightened by drinking the hot water while in the bath, a course which the Arabs never neglect. Then after cooling off gradually and a further rest the treatment is finished. Thus it will be seen that their mode of action is akin to the Turkish bath, and, like it, is followed by some sense of lassitude. How far the chemical constituents of the water exercise a medicinal effect on the skin I am not prepared to say, and I think it would be very difficult to separate their effects, if they have any, from those of the heat, subsequent sweating, and climate.

The class of cases which derive most benefit from the treatment at Hammam R'Irha is undoubtedly the rheumatic.

It is stated by Dr. Renard,[1] who was for a long time in charge of the military hospital, that out of 400 cases of "rheumatism" entered in the hospital register, 330, or a proportion of 4 out of 5, were marked on dismissal as having been benefited in a greater or less degree; 50 or 60 remained in the same condition; and between 15 and 20 were worse. This author ascribes the number of those who were not relieved to

[1] 'Résultats Thérapeutiques d'Hammam R'Irha,' 1882, p. 9.

broken-down constitutions, visceral disorders, or entirely mistaken diagnoses. Those cases certainly do best which are most recent and which occur in the young, or where the constitution and viscera are otherwise sound. But old-standing cases also derive benefit if a prolonged course be persevered in; the swelling and stiffness are lessened, and the pains relieved.

Rheumatoid arthritis in advanced life rarely seems to improve much, though I met with one case which was sensibly ameliorated by a six weeks' course. It is well to remember that here, as I believe in all hot mineral baths, the first effect is always to increase the rheumatic pains, and the full benefit may not be perceived until some little while after the completion of the course, and perhaps after leaving the place.

Dr. Renard states that other joint affections may be treated with advantage here by the warm baths and massage. He treated 42 cases with the following results: cures 11, ameliorations 29, same state 2.[1] Traumatic, he says, are the most satisfactory of all joint lesions; then, in order, rheumatismal, gonorrhœal, scrofulous, and gouty; *these last are the most rebellious of all.*

Cases of chlorosis do well at Hammam R'Irha by drinking the chalybeate spring, and regular exercise, but the warm baths are unsuitable for them. Drinking the waters of both hot and cold springs appears to have a beneficial effect on some forms of irritable dyspepsia. Cases of chronic bronchitis and emphysema might be treated successfully by inhalation of the hot vapour, and a case of this affection under my care obtained marked benefit by these means.

I do not think the climate is available for any form of phthisis except in its very early stages, and in the autumn or spring months; and, although I watched a case of incipient pulmonary tuberculosis improve at Hammam R'Irha in April of this year, I am decidedly of opinion that this ailment does better at Algiers.

As a change from the latter place, before returning home at the end of the season, it offers many advantages; for at a time when Algiers is getting oppressively hot, this mountain station is still cool and fresh, and so the transition to England is less sudden.

[1] Résultats Thérapeutiques, p. 6.

Lastly, for convalescents from protracted illness, and for those who from overwork, or more correctly overworry, are broken down in health, Hammam R'Irha affords a quiet retreat without too much gaiety or too much luxury, but with the purest of air to breathe, a thorough change of scene and mode of life, and a mild yet exhilarating winter climate.

CASES OF ULCERATIVE ENDOCARLITIS.

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The following cases of ulcerative endocarditis which were under treatment in St. Thomas's Hospital during the year 1883 illustrate some of the different forms which the disease may assume and the points which have to be taken into consideration in its diagnosis. I shall, after describing the cases more or less in detail, append a few remarks on what appear to me to be their most interesting features. I have to thank the physicians for their permission to use the cases under their care, and Dr. Bristowe for the notes of Case 5.

Case 1.—*Ulcerative endocarditis affecting mitral valve; emboli in right middle and posterior cerebral arteries and in vessels on surface of brain; left hemiplegia; infarcts in kidneys and spleen; death; autopsy.*—Ruth L—, æt. 25, married, admitted Jan. 19th 1883, into Charity Ward under Dr. Ord.

Previous history.—Had rheumatic fever at nine years of age and chorea at eleven; no other serious illness. Married three and a half years, has one child. Lives in a damp low-lying place (Great Bookham), but has never had ague. Other members of the family very subject to rheumatism.

Present illness.—Suckled her child (born two years ago) for fifteen months. At the end of this was very exhausted and

weak and since then has had progressive weakness, shortness of breath, and cough.

On admission.—Thin, complains of shortness of breath, pain in left side and in legs. Some tenderness of right foot, no œdema, no swelling of joints.

Heart: dulness commences above at third rib and laterally at mid-sternum. Apex beats between fifth and sixth ribs just internal to nipple. Thrill felt over impulse, systolic and presystolic murmurs heard at apex and nearly all over the chest, loudly below angle of left scapula.

Lungs: occasional crepitation at left apex, otherwise normal.

Abdomen normal; tongue coated; appetite fair; bowels regular. Pulse 124, small and compressible. Urine 1027, lithates, no albumen. Temp.: p.m. 100·2° F.

From January 20th to 25th the temperature varied generally from about 100° in the morning to 101·8° at night and she sweated profusely, but otherwise there was no alteration in the symptoms.

On the 25th it was noted that she had considerable headache and had slept badly the night before. For some days after this there was a slight improvement, the temperature not rising so high at night and there being less headache. On Feb. 3rd the temperature was 97·6° in the morning and 99·6° in the evening. By Feb. 8th, however, the headache and fever had returned, the temperature on the morning of that day being 97·8° and in the evening 102·6°. She was treated with Pot. Brom., gr. xv; Tinct. Belladonna, ℥x, every six hours.

From the 8th to the 23rd her temperature ran a very irregular course, on some days varying from normal in the morning to 103° in the evening, on others being higher in the morning than in the evening, and on others being normal throughout.

On Feb. 23rd she had great headache and had been delirious the previous night; her expression was anxious; there was no change in the condition of the heart.

Feb. 24th.—Drowsy all night, cannot be roused. Does not protrude tongue when asked, mouth drawn to right. Eyes closed, left arm drops heavily when lifted, left leg paralysed. Left patellar reflex exaggerated, ankle-clonus on left side, none on right. Left eyelid easily opened by the finger, but right eyelid resists.

26th.—Motions passed in bed. To-day ankle-clonus on both sides, plantar reflex exaggerated on right side, very little obtained on left, both patellar reflexes exaggerated.

Has slightly regained power in left leg, sensation doubtful. Still almost completely unconscious. Some decided œdema of hand and foot on paralysed side, none on the sound side. Temp.: a.m. 97°, p.m. 97·2°.

27th.—Decided return of power in left arm. Slight œdema of right side of face, moans and cries out continually. Temp.: a.m. 96°, p.m. 97·6°.

March 1st.—Somewhat more conscious, moves both arms and legs. Temp.: a.m. 98·8°, p.m. 98·8°.

3rd.—Patellar reflexes both brisk. No ankle-clonus, but front-tap contraction on left side. Temp.: a.m. 97·4°, p.m. 98·4°.

5th.—Very noisy in night, now comatose, breathing stertorous, left foot cold. Died at noon.

Post-mortem examination.—March 6th, 2 p.m., by Dr. Sharkey; body thin and pale. Pleural and pericardial cavities each contained a slight excess of clear serum. Both lungs brown in colour and œdematous, lower lobe of left collapsed. Heart generally hypertrophied, weighing one pound; auricles, especially the left, full of black clot. Aortic valves competent and presented no evidence of disease when viewed from aorta. Mitral valve when looked at from auricle presented round its whole circumference exuberant excrescences which extended also over a considerable area of the neighbouring auricular endocardium. Heart not opened, but sent to museum.

Brain: right middle cerebral artery occupied by a firm reddish-brown clot, which completely filled it. This extended along the course of the vessel in the fissure of Sylvius. At one of the earliest bifurcations of the artery the vessel was distended locally and presented a nodular appearance. The nodule was white and firm and apparently an embolus. A little further on was another such hard nodule, around which was a small quantity of recent lymph. The temporo-sphenoidal lobe and roof of the fissure of Sylvius were softened. The posterior cerebral artery on the same side was similarly obstructed after about one to two inches of its course. The left middle and posterior and both anterior cerebrals were healthy. Dotted here and there on the surface of the convolutions were four or

five little masses of lymph, which were found to cover similar hard nodular embolic thickenings of vessels. The brain in their neighbourhood was soft and discoloured, the corpora striata and other large basal ganglia all appeared healthy.

Kidneys were thickly studded with infarcts of various ages. Liver normal.

Spleen generally adherent to parts around. Several old infarcts, none very recent; attached to upper and internal surface was a cyst about one inch in circumference and somewhat conical in shape, the apex of the cone penetrating the splenic substance. This sac had thin fawn-coloured walls and contained thick purulent fluid and appeared to be an old infarct.

Case 2. *Mitral and aortic disease, probably ulcerative endocarditis, left hemiplegia; no post-mortem examination.*—Eliza G—, æt. 31, mantle-maker, single, admitted to Christian Ward Feb. 6th, 1883, under Dr. Stone.

Previous history.—Has had rheumatic fever twice, and since the second attack has been subject to palpitation; four months ago was thrown out of a chaise and extensively bruised; has been under medical treatment ever since.

Present illness.—For the last eight weeks has had slight cough and for one week the feet have been swollen. Has felt extremely weak lately.

On admission.—Pale and thin, complains of swollen feet, shortness of breath, and cough. Legs slightly swollen. Heart's apex felt just below and inside nipple. Impulse strong and heaving, no thrill. Dulness reaches upwards to third rib and to right within a finger's breadth of the left edge of the sternum. All over the front of the heart may be heard a systolic murmur, loudest at the apex, but heard also in the axilla and in the back. Pulse 114, small, compressible.

Lungs normal, except for slightly impaired resonance and feeble breathing at both extreme bases. Abdomen appears normal. Urine 1030, no albumen, lithates. Tongue points slightly to the left, slightly coated. Mouth slightly dropped at left angle, says it has always been so.

Bowels act regularly; appetite good; sleeps well. Temperature normal. She was treated with Pil. Digitalis co., gr. v, bis die, and mixed diet.

On Feb. 10th it was noted that a diastolic murmur could be heard in the second left interspace propagated down the sternum. With this exception her general condition improved. The œdema of legs disappeared and the shortness of breath and cough became less. The only circumstance, in addition to the alteration in the heart's sounds, that gave rise to the suspicion of ulcerative endocarditis at this period was the fact of a slight rise of temperature every night.

On Feb. 12th she was put on quinine and iron mixture and allowed to get up.

Feb. 13th.—Diastolic murmur at base, very distinct, ? systolic also.

14th.—At 4.30 p.m. while talking to her friends in the ward suddenly complained of pain in the head, preceded by some thickness of speech. Felt a little faint, but had no fit, vertigo, convulsion, or loss of consciousness The left angle of mouth was then seen to be markedly dropped and the tongue protruded to the left. The left arm, and shortly afterwards the left leg, were found to be powerless. She became drowsy, but could always be roused. Reflexes, except plantar, diminished; sensation impaired in left arm and leg. Temp.: 6 p.m. 99·8°, midnight 102·4°.

15th.—Drowsy, but always answers; no alteration. Temp.: 4 a.m. 103·6°, noon 101°, midnight 102·6°.

16th.—Has considerable headache, no other change. Temp.: 4 a.m. 102°, noon 99·6°, midnight 102·4°.

18th.—Restless, much headache and pain in back; very talkative. Sensation much impaired, reflexes diminished. No ankle-clonus. Left arm somewhat stiff. Temp.: 4 a.m. 100·4°, noon 98·2°, midnight 101·2°.

During the next week there was no material alteration, the temperature varying several degrees in the twenty-four hours and running up and down irregularly; for example, on the 23rd:

4 a.m.—101·4°.	Noon—96°.	8 p.m.—103·4°.
8 a.m.—100·2°.	4 p.m.—99°.	Midnight—101·4°.

Feb. 26th.—Sensation returned on left side, but no power; passes evacuations in bed. Complains greatly of headache. Some tenderness in splenic region, but no evident enlargement. Sweats a good deal, no rigors.

March 1st.—Distinct double murmur at base, the systolic transmitted upwards and the diastolic down the sternum. Heart's apex felt one inch outside nipple between fifth and sixth ribs. Left arm slightly stiff, no other alteration. Evacuations retained and passed voluntarily. Temperature as before.

2nd.—Tenderness over spleen and dulness increased.

10th.—Urine ammoniacal, contains pus and mucus, has nausea, sleeps badly. No alteration in paralysed limbs. Temperature still runs an irregular course. Rhonchi all over lungs, but no dulness.

13th.—Taken out by her friends. It was discovered that she died in nine days from her removal. No post-mortem examination was made.

Case 3. *Ulcerative endocarditis; aortic and mitral disease; infarcts in kidneys and spleen; death; autopsy.*—Samuel J—, æt. 15, admitted March 20th, 1883, from a training ship into George Ward, under Dr. Bristowe.

No history of rheumatism in family.

Previous history.—Three years ago had acute rheumatism, and was told that his heart was affected. Fourteen months ago went to a training ship and whilst there has had several attacks of rheumatism. Never had scarlet fever or chorea.

Present attack.—On March 16th complained rather suddenly of pain in the chest with palpitation, and of some swelling and pain in both knees.

On admission.—Cyanotic. Breathing rapidly. Some dry cough. Herpes on right side of mouth and nose. Right knee swollen and tender; no other joints affected. No œdema of legs.

Lungs: no abnormal sign detected.

Heart: bulging of chest wall over cardiac area. Impulse wavy, strong carotid and epigastric pulsation. Apex beat between fifth and sixth ribs three inches to left of sternum. Dulness extends one inch to right of sternum and upwards to third rib. At apex are heard a systolic and a presystolic murmur, the systolic heard also in axilla. At base is heard a double murmur, the systolic transmitted upwards and the diastolic downwards. Pulse 116, collapsing. Liver measures

six inches in nipple line, surface smooth and hard. Spleen felt on inspiration. No ascites. Urine scanty, 1032, no albumen or sugar.

March 22nd.—? Pleural friction along margin of sternum, no other signs. General condition worse. Cyanosed.

Died March 23rd.

	A.M.			P.M.		
	4.	8.	12.	4.	8.	12.
March 20	—	—	—	102°	102·4°	101·8°
21	100·2°	100·4°	100°	101·6°	—	100°
22	100·6°	100°	100°	100·8°	—	98·6°
23	99·6°	97·6°	—	—	—	—

Post-mortem examination March 24th, by Dr. Hadden.—Well-nourished boy. Rigor mortis absent.

Pericardium: Some hæmorrhages under visceral layer.

Pleura and peritoneum normal.

Heart weighs 12¾ oz., rounded, right ventricle dilated and hypertrophied; left dilated, not hypertrophied. Aortic valve incompetent, free edges of flaps converted into little firm warty masses, at free edges of which is some recent adherent clot. Some recent vegetations on endocardium just below the valve and on ventricular aspect of anterior flap of mitral. On auricular aspect of anterior flap of mitral valve, at its extreme right, is a small, empty, almost pedunculated aneurism, of size of a horse-bean. Lungs congested, no consolidation.

Liver: nutmeg, weighs 3 lb. 14 oz., depression on upper surface from enlarged heart.

Spleen contains a few small old infarcts.

Kidneys: convex aspect smooth, but in each organ two or three depressed cicatrices. Cortex thickened and decidedly opaque.

Case 4. *Chronic endocarditis; ? arrested ulcerative endocarditis; mitral and aortic disease; infarcts in spleen; chronic tubal nephritis; dropsy; death; autopsy.*—Charles B—, gunsmith, admitted into Arthur Ward, under Dr. Stone, on April 28th, 1883.

Family history.—Father died of consumption. No history of rheumatism.

Previous history.—Had the usual infantile diseases, but never scarlet fever. Twelve years ago had rheumatic fever and was ill in bed for three months. Since then has not been subject to palpitation, shortness of breath, coughing, or swelling of legs. Has not lived in ague districts, and never had ague or any attacks of shivering before the present illness.

Present illness.—Since the beginning of January has been subject to rigors in the morning followed by heat but not by sweating. Since Easter has been subject to night-sweats. The rigors at first occurred at intervals of some days, but latterly have recurred daily. Has not suffered any pain. Since January has had slight cough, never any hæmoptysis. Has been losing flesh and getting weak, but was able to work till the end of March. For a fortnight has been sick in the morning after breakfast, and has been troubled with palpitation and shortness of breath on exertion. No history of any suppuration.

On admission.—Complains of shivering in the mornings and sweating at night. Says that the rigors occur every morning about 8 o'clock. Is pale but fairly nourished. No œdema of legs.

Heart: apex beats apparently behind sixth rib, half an inch inside nipple. Impulse diffused and heaving. Systolic thrill felt at apex. At apex is heard a loud systolic murmur propagated to left. In third left interspace, close to sternum, is a double murmur, the systolic portion transmitted upwards, and the diastolic down the sternum. Pulse 120, jerky, collapsing. Respiration 20, regular. No abnormal signs detected in lungs.

Tongue clean. Appetite good. Bowels open regularly. Abdomen apparently normal. No diarrhœa. No typhoid spots. Urine 1020, acid, clear, no albumen. Pupils equal, no headache, no delirium. Temperature at 4 p.m. 102°, at midnight 99°.

April 29th.—At 8 a.m. had a rigor lasting fifteen minutes, the temperature rising to 104·8°, but falling by noon to 98°. At midnight it rose again to 100°, but at 4 a.m. on the 30th it had again fallen to 99°. At 8 a.m. on the 30th another rigor ensued, with a temperature of 105·4°, falling, however, at noon to 100°, and at 4 p.m. to 97°, a range of 8·4° in eight hours. He was ordered five grains of sulphate of quinine every four hours.

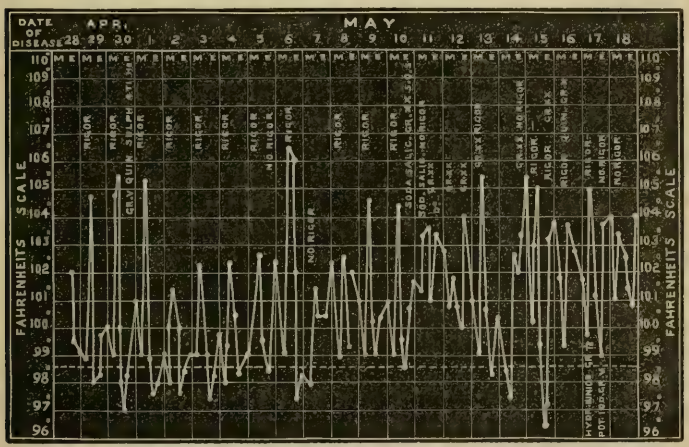
May 10th.—Since April 30th has had a rigor every morning (with one exception) somewhere about 8 o'clock, followed by a rise of temperature, but not by sweating, and not affected at all by the administration of quinine.

On the 6th the temperature rose at 1 p.m. to 106·4°, falling at 9 p.m. to 97°.

On the 7th, the morning on which there was not any rigor, the temperature rose to 101°, and was only followed by a fall to 100·5°.

No alteration in physical signs. Sweats profusely at night.

On May 10th he was ordered salicylate of soda in doses of gr. xx, to be given as the temperature rose. But up to the 17th no marked effect had been produced on the irregular character of the fever; the rigors, however, had been not so regular in appearance at 8 a.m., and on the 14th there was a range of 8·4° without a rigor. The character of the pyrexia can be well seen in the accompanying chart of the first three weeks of his stay in hospital.


DATE OF DISEASE
APR.
MAY
28 29 30 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
FAHRENHEIT'S SCALE
110 109 108 107 106 105 104 103 102 101 100 99 98 97 96
RIGOR
NO RIGOR
GELS QUIN. SULPH.
SODA SALIC.
SWEATS
HYDR. BINIOD.
POT. IODID.

May 18th.—Was ordered gr. $\frac{1}{10}$ of Hydrarg. Biniod. and gr. v of Pot. Iod. three times a day, and the following note was made: "Takes food well, feels quite well except when shivering; some epistaxis this morning; no alteration in physical signs; urine 1020, acid, contains a trace of albumen."

May 22nd.—No albumen in urine for the last three days. Some epistaxis on 20th. No alteration in heart-sounds. Had

two rigors on this day, one at noon, with a temperature of 104·8°, and one at 4 p.m. with a temperature of 103·2°, a fall to 98·4° occurring in the interval. No sweating after the rigors, but sweats in sleep. For the three days preceding the 22nd had no rigors, but the temperature presented the same irregularity.

30th.—Has had rigors more frequently since the 22nd, and now sweats after shivering. Sleeps well. Has no pain and no cough. Nothing abnormal found in lungs. Heart's apex almost in nipple line. Dulness reaches up to third interspace and encroaches slightly on left border of sternum. No alteration in murmurs.

From 24th to 28th, took Sodæ Pot. Tart. ʒij, and Vin Antimon. ♏x, once a day, and on 28th was ordered Tr. Aconiti. ♏v, to be given at 8 a.m. and repeated in two hours. A rigor, however, occurred with temperature 104·8°. No treatment seemed to have any effect. The urine contained no albumen, and there was no tenderness or apparent enlargement of liver or spleen.

June 3rd.—Temperature varied ten degrees in the twenty-four hours, from 107° at noon after a prolonged rigor to 97° at 4 p.m. with sweating.

7th.—For the last two days has had diarrhœa. Very low spirited. Rigors occur daily with great variations in the temperature. He was ordered Liq. Arsenicalis, ♏v, ter die.

25th.—Had no rigors from the 12th to the 22nd, and on the latter date a slight one, but none since. The range of temperature has not been so great. Urine contains a trace of albumen. Heart's apex beats in nipple line, no other change. Scattered rhonchi all over lungs. Splenic dulness increased. Looks pale and is very anxious. Liq. Arsenicalis, ♏x, t. d.

30th.—Tenderness of both ankles, no swelling or redness. Tongue moist and clean. No vomiting. Slight cough. Takes food well. Thirsty.

July 9th.—Had two rigors on the 4th, but with those exceptions has had none since June 28th. Daily range of temperature varied from 1·4° on July 2nd to 5·6° on June 29th. Complains of his feet. Some œdema of ankles. No redness. Appetite bad. Vomits at varying intervals after food, but without any preceding pain. Splenic dulness much increased. Some

scattered rhonchi over both lungs. Occasional cough with mucous expectoration streaked with blood. No alteration in heart. Urine for the last few days has contained a large quantity of albumen, is slightly turbid.

11th.—Rigor at 8 a.m. Temperature 106·2°, falling by 4 p.m. to 96·2°. No rigor thence till July 18th. Temperature rarely as low as 99°, generally ranging between 100° and 105°. Sometimes higher in the morning and sometimes in the evening.

20th.—Arsenic stopped.

On the 23rd he had a slight rigor, and on the 30th a severe one, with temperature 106·8°, followed by a fall to 97·8°.

August 2nd.—Much more cough. Legs more swollen. Urine loaded with albumen. Apex of heart felt nearly one inch outside nipple. Dulness extends to right border of sternum. No alteration in sounds.

11th.—Some epistaxis.

14th.—Slight swelling of left wrist with some pain. No redness. Ordered Pot. Iod., gr. iv ; Sodæ Hypophosph., gr. x, Ferri et Ammon. Citr., gr. v, ex aqua, t. d. s.

16th.—Much epistaxis yesterday.

20th.—Some doubtful friction at right base. Vocal resonance increased on that side. Some pain in axilla. No alteration in character of fever, but no rigors.

23rd.—Thighs more swollen and some general dropsy.

27th.—Fine crepitation over lower third of left lung. No dulness.

28th.—More epistaxis.

29th.—Cannot speak above a whisper. Daily range of temperature 4° or 5°.

September 5th.—Deficient resonance at both bases, breathing vesicular, some scanty crepitation. No alteration in heart.

12th.—Urine contains three-eighths of albumen.

14th.—Diarrhœa. Dyspnœa.

18th.—Died.

Post-mortem examination (by Dr. Sharkey).—Body very pale. Moderate general dropsy. Abdominal cavity contained a few pints of serous fluid. No peritonitis. Pleural cavities each contained about a pint and a half of serous fluid. Lungs large, very œdematous, breaking down easily under the finger.

Heart: pericardium contained about an ounce and a half of clear serum with a few flocculi of lymph floating in it. A little lymph on visceral layer both at base and over the ventricles. Aortic valves admitted of regurgitation. Mitral also regurgitant except when pressure of ventricle raised very high. Both ventricles were much hypertrophied. Flaps of mitral valve evenly thickened and chordæ thick. Valve opaque, white in colour, and the process evidently chronic. No ulcerative process on the valve.

The aortic valves were similarly thickened by chronic inflammation, and at the junction of two of them a small round ulcer was found, injected and a little ragged. This was the only evidence of an acute process going on. There were in the aortic valves irregular patches of thickening which might have been the sites of previous acute disease.

Spleen: enormous, very soft, and here and there infarcted. The infarcts were mostly deep red and hard to the touch; only one was at all decolourised.

Brain: wasted, otherwise normal.

Kidneys: large, softened, mottled red and white. Vessels beneath capsule injected. Cortex slightly swollen, very mottled. Capsule thin, peeling easily. No evidence of infarcts.

Liver very large. Mottled pink and white. Not nutmeg.

Case 5. *Ulcerative endocarditis; embolism of left middle cerebral artery, &c.; death; autopsy.*—Jessie D—, a nursemaid, æt. 23, was admitted under Dr. Bristowe's care on July 22nd, 1883.

She had scarlet fever when nine years old, but it was free from complication; and she has enjoyed uninterrupted good health since up to the commencement of the present illness. This she attributes to a severe fright she had in the middle of the night a fortnight ago. She says she had a sudden pain at that time followed by diarrhœa; the diarrhœa lasted for several days, and was then followed by sickness. There was some improvement in these respects two or three days before admission. But although she was getting weaker and weaker she did not take to her bed until two days ago. Yesterday she was attacked with some pain, increased by drawing a deed breath, and referred to the cardiac region.

On admission she was very weak and feverish, with tremulous, furred, and somewhat dry tongue. She was perfectly sensible. There was a systolic murmur at the apex of the heart, but no other sign of thoracic disease. Her abdomen was a little tumid and tender, especially across the lower part and in the situation of the spleen; the spleen, however, could not be felt. The urine had a specific gravity of 1030, contained lithates, and presented a trace of albumen. She had some bilious vomiting during the day. There were no typhoid spots. Her pulse was 120; temperature 104·4°; and her respirations 36. At 8 p.m. the temperature had sunk to 99·8° and the pulse to 112; but at midnight the temperature had risen again to 104·4°.

23rd.—Restless during the night, but no delirium. Has complained a good deal of pain in the left side. She has vomited a little, and the bowels have been relieved once, the motion being of healthy colour and consistence. Tongue coated and inclined to be dry. During the day the temperature varied from 102° in the early morning to 104·8° at 8 p.m.; after that it fell a little. Respirations about 36; pulse about 126.

24th.—The patient was delirious last night, but in other respects has presented but little change. She was somewhat sick in the morning. Dr. Bristowe saw her in the afternoon and examined her carefully. The tongue was coated, but not dry; there was a soft but unmistakable systolic murmur at the apex. There were no signs of pulmonary disease. The abdomen was a little tumid, and it was tender both in the left hypochondriac region and across the lower part, but not specially in the cæcal region. The temperature ranged from 103·4° at 4 a.m. to 101·4° at 8 p.m.; at midnight it had risen again to 102°. The pulse was about 120, very feeble; the respirations 38, and often attended with moaning.

25th.—Patient exceedingly prostrate. No further vomiting. No action of bowels. No complaint of pain; no delirium, but very drowsy. Tongue fairly clean and moist. Pulse 120; respirations 36. Temperature variable during the day; it was at its lowest at 8 a.m., when it stood at 101°, and at about 4 p.m. it was 102°. In the evening she was found to have lost the use of the right arm and leg, and the mouth was seen to be drawn a little to the left. She was then almost completely

unconscious. At 8 p.m., and again at midnight, the temperature was 103·2.°

After this she became completely unconscious; she lay on her back, occasionally moving the left arm and leg, with flushed face and sordes on the lips and teeth. Her temperature varied a good deal, rising to 106·4° a few hours before death, but sinking to 103·8° at the moment of death. Her pulse gradually rose until it was 160 in the minute, and her respirations, which varied, mounted at length to 60. She died at 8 p.m. on the 27th.

Autopsy (July 28th.)—A healthy-looking girl. Chest: pleuræ healthy, excepting that there was a thin film of recent lymph on the surface of the lower part of the left lung. Lungs congested and in their lower parts behind collapsed. The collapsed part of the left lung was more congested and void of air than that of the right lung. Pericardium healthy, heart contracted, and of natural size and consistence; the auricles contained fluid blood. The ventricles were contracted and almost empty. The aortic valves were competent, but there were a few granular vegetations on the ventricular aspect of each, one mass being about the size of half a pea. These were rosy-coloured and slightly translucent in their most prominent parts, and adhering to them were strings of recent coagulum. The mitral valves were similarly affected. Running round the free edge on the auricular aspect were growths of small but irregular size, and presenting all the characters of those found on the aortic valves. There was a small patch in the wall of the auricle adjoining the valve. Abdomen: peritoneum healthy; liver pale, healthy; spleen about five inches long, and proportionately large in other dimensions. It was generally pulpy, and presented numerous large infarcts in various stages of degeneration. One at the lower end had partially broken down into a yellow pulp. There was a little recent lymph on the surface of the spleen, and some also on the adjoining edge of the liver. The kidneys were large and also presented numerous scattered infarcts of different ages. Stomach and intestines generally healthy. But there was a patch of deep congestion occupying a considerable part of the ascending colon and in the small intestine two or three small submucous hæmorrhages, apparently the result of embolism. The lining membrane of the womb was congested and pulpy. Head:

the surface of the brain appeared healthy, except that at the back of the upper part of the left hemisphere there was a patch of soft adherent lymph about the size of a shilling. The left middle cerebral artery at its bifurcation was blocked up by an embolus. This occupied mainly the commencement of the posterior branch, but both branches were filled for some little distance beyond the embolus with more recent clot. There was softening with a few minute hæmorhhages in the brain substance outside and below the corpus striatum and optic thalamus. But these ganglia were themselves little if at all affected, and the softening did not reach the surface of the brain or of the ventricle.

Case 6.—*Ulcerative endocarditis; myocarditis; chronic renal disease; infarcts in spleen and kidneys; death; autopsy.*—Elizabeth T—, æt. 25, married, was admitted into Charity Ward under Dr. Sharkey on August 3rd, 1883.

Family history.—Father died of phthisis; no other noteworthy fact.

Previous history.—Besides measles and whooping-cough in infancy had scarlet fever at nine years of age. Never had rheumatic fever. Has been married seven years and has four children, the youngest aged one year.

Present illness.—Six months ago began to feel languid and weak in the knees. Six weeks ago legs began to swell and she was troubled with headache. Three weeks ago began to feel pain about the lower end of the sternum, worse after food. Has not been troubled with palpitation till quite lately.

On admission.—Is pale and perspiring, complains of pain in the abdomen and palpitation of the heart.

Heart: dulness begins above at second intercostal space and extends from mid-sternum to position of apex beat between the fifth and sixth ribs in the nipple line. Faint impulse felt half an inch outside. At apex is heard a short presystolic murmur and a rough systolic one conducted to the axilla. Along left border of sternum is heard a musical systolic and short diastolic murmur, the systolic being propagated upwards. Pulse 120, collapsing.

Lungs: Resonant, breath-sounds harsh, otherwise normal.

Abdomen: flaccid, tender over the liver and spleen, but organs not felt.

Lips pale, tongue dry and pale. Expression anxious; urine 1015, contains one-third albumen, some granular casts, and a few blood-corpuscles. No œdema of legs on admission. Catamenia have not appeared for twelve months; is suckling. Temp.: 8 p.m. 104·2°, midnight 102·6°.

August 5th.—No alteration in physical signs, wanders at night.

6th.—Less abdominal tenderness, spleen felt one inch below ribs, no alteration in heart,

7th.—Feels better, no delirium. Pulse 88; motions dark. No typhoid spots.

10th.—Had a rigor last night, lasting seven minutes. Temperature rose to 104·4.°

11th.—During the night had an attack of dyspnœa with much cardiac pain and sense of suffocation.

12th.—Looks much worse, paler, and expression more anxious, no delirium, no more rigors.

13th.—Began to vomit in the night and seems very exhausted. Breath very short. Died early on the morning of the 13th.

The following were the temperatures observed in the hospital:

	A.M.			P.M.		
	4.	8.	12.	4.	8.	12.
August 3	—	—	—	—	104·2°	102·6°
4	101·4°	100°	—	—	103·2°	104°
5	102°	99·4°	101°	102·8°	103·6°	101·8°
6	100·4°	99°	100°	103·4°	104·2°	102·2°
7	102·2°	99·2°	98·6°	102·6°	104·4°	104°
8	101·2°	101·4°	101·6°	102·6°	103·8°	104·6°
9	99·8°	96·4°	97·8°	101·2°	104·4°	104·2°
10	101·4°	101·2°	100·2°	101·4°	104°	101·6°
11	101°	100°	99·8°	100·6°	101·2°	102·2°
12	101·8°	98·6°	100·1°	99°	104·4°	99·4°
13	100·4°	—	—	—	—	—

Post-mortem examination (Aug. 14th) by Dr. Sharkey.—Body of pale emaciated woman, no dropsy.

Lungs: œdematous, otherwise normal.

Heart: a little turbid fluid in pericardium and very slight signs of pericarditis. At base of aorta was seen a yellow inflamed prominence which on pressure yielded a drop of pus. This was due to spread of inflammation from the aortic valves through the cardiac muscle. Heart generally hypertrophied, substance very soft and pale.

Aortic valves one mass of vegetations, very soft and clearly not of long standing. Inflammation had evidently attacked the muscle, and this besides appearing as already stated beneath the pericardium, also formed a projection on the right side of the auricular septum.

The valves were quite incompetent, half of one being destroyed.

The anterior flap of the mitral valve presented on the ventricular aspect a large area of deep ulceration almost producing perforation. On the auricular aspect was a large fungating button-like mass. The whole process was evidently very acute, and there were none of the small firm pale vegetations seen in less acute cases.

Liver: large and pale.

Spleen: very large, weighing twelve ounces, soft, but with only a few white dots to suggest infarcts.

Kidneys: very soft, large, and mottled. Capsule slightly adherent and leaving a somewhat granular surface. Cortex swollen and mottled, evidently general inflammation of the organs. In addition to this there was one infarcted area, conical in shape, about three quarters of an inch broad at base. It was hard, pale yellow, and caseous, surrounded by an area of hyperæmia.

Brain healthy; intestines generally congested.

Case 7. *Ulcerative endocarditis; infarcts in kidneys and spleen; embolism of right middle cerebral artery; softening of right corpus striatum; pachymeningitis hæmorrhagica; left pleurisy with effusion; gall-stones; death; autopsy.*—Edward K—, æt. 60, an engineer, was admitted into George Ward under Dr. Bristowe on September 19th, 1883.

Previous history.—Had "Roman fever" several years ago, but otherwise has been a fairly healthy man. Never had rheu-

matic fever. In April, 1882, had a blow from an iron bolt on the left elbow. Is said to have been unconscious for a few minutes, and left arm has always been stiff since then.

Present illness.—Two and a half months ago had a very severe shivering fit, and since then has had several recurrences of the same symptom.

In addition to this he has suffered from rheumatic pains all over the body, chiefly in the left leg, but without swelling of joints. Has been depressed in spirits and unwilling to move about; speech has been slow, but has had no difficulty in articulation. For two months has been confined to his room and wrote his last letter one month ago.

Since then his memory has been very hazy. Recently has been noticed to twitch his left shoulder and jerk his head to the left. He had been seen by two doctors, one of whom said that patient was suffering from intermittent fever with great depression, and the other that he was on the verge of general paralysis of the insane.

On the day before admission had a "fit," after which he was found to have paralysis of the left side and was unable to speak plainly.

On admission.—Was found to have paralysis of the left arm and leg with occasional twitching of the latter. The reflexes were exaggerated on the affected side; there was slight ptosis of the left upper lid. Pupils were equal and acted to light. Tongue protruded first to the right and then to the left. Sensation not impaired.

Lungs: normal. Heart apparently not enlarged, a harsh systolic murmur heard loudest at apex. Spleen not made out.

Abdomen somewhat distended; breathes deeply, no stertor, speaks deliberately but clearly; memory bad. Pulse 100, small, regular. Urine 1028, scanty dark, no albumen. Temp. 98·6°.

September 20th.—Temp.: a.m. 100·2°, p.m. 100.°

21st.—Very drowsy, but no other alteration. Temp.: a.m. 99·8°, p.m. 100.°

23rd.—No ptosis now, mouth drawn somewhat to right, tongue protruded to left. Some twitching in left arm and leg, and some pain in left side of abdomen. Temp.: a.m. 101·2°, p.m. 100°.

25th.—Some dyspnœa and signs of a small quantity of fluid in left pleura. Temp.: a.m. 101°, noon 99°, p.m. 102°.

27th.—More drowsy; swallows badly, has a slough on the left heel. No twitching, no increase in the paralysis. Is disinclined to talk. Temp.: a.m. 100°, p.m. 102·4°.

28th.—In the night became comatose and died; no alteration in the physical signs.

Post-mortem examination (September 29th).—Body well nourished. Rigor mortis still in legs. On opening the skull the dura mater was found to be adherent very extensively to the bone and much thickened. On its inner surface, especially over the occipital lobes, were several hæmorrhagic patches adherent to the dura mater and apparently covered by a soft new membrane, in which were numerous small vessels. Arachnoid somewhat opaque, and between it and the shrunken convolutions was a considerable quantity of serous fluid. Along the middle cerebral artery of the right side, just at its division in the Sylvian fissure, was a yellowish, somewhat cheesy patch, about three-quarters by three-eighths of an inch in size, adherent to the subjacent brain substance and obscuring the vessels, which seemed to be obliterated in their passage through it. No definite embolus could be found in the vessels. On opening the brain the extra-ventricular portion of the right corpus striatum and the tissue immediately outside it was found to be softened into a cavity with ragged walls. No clot. Convolutions apparently not affected. Rest of brain somewhat firm, and convolutions wasted, otherwise normal.

Heart: right side dilated. Mitral valve allowed free regurgitation and the edge was much puckered. On the auricular surface of the valve and on the posterior surface of the auricle were numerous recent vegetations, one of which, about the size of a horse-bean, was attached by a very slender peduncle. Considerable ulceration on the surface of the vegetations. Aortic valve normal. Pericardium contained five ounces of clear serum.

In left pleura was one pint of turbid fluid with flakes of lymph floating in it, and some soft recent adhesions were found between the lung and the parietal pleura. Lower lobe of left lung collapsed.

Right lung œdematous.

Liver normal. Numerous gall-stones in gall-bladder.

Kidneys showed several infarcts of different dates, otherwise normal.

Spleen large and soft; one large, yellow, softening patch in the lower end. Organ adherent to abdominal wall.

Case 8. *Ulcerative endocarditis; embolism of both femoral arteries and of superior mesenteric; gangrene of intestines; commencing gangrene of legs; infarcts in kidneys and spleen.*—George H. M—, æt. 43, a porter, was admitted into Arthur Ward, under Dr. Stone, on October 17th, 1883.

The family history was unimportant, except that his mother died of "dropsy."

Previous history.—Has never had rheumatic fever. Has been subject to occasional slight attacks of pain in the joints, but was never laid up by any illness. Habits temperate.

Present illness.—Six weeks ago fell violently backwards on the ground in a sitting posture, but was not much hurt. Five weeks ago was sweeping a yard, when he was seized with a severe shivering fit, after which he became very faint. He, however, continued his work that day and the next as usual. Three days after he noticed some weakness of the legs and went to St. Bartholomew's Hospital and was treated as an out-patient for acute rheumatism. Since then has been troubled with palpitation after exertion and some dyspnœa.

On admission.—Dark and thin, complains of loss of power in legs and pain in left knee. Knee not swollen or red, slightly flexed, extension painful. No complaint of pain in groins. Tibial arteries unfortunately not examined on admission. Sensation normal. Knee-jerks equal and not excessive or deficient. Plantar reflex most marked in left leg. Heart normal in area; presystolic thrill felt at apex; loud presystolic and systolic murmurs best heard in fourth space to left of sternum and not at base. Pulse 108, full and bounding, arteries cord-like. Tongue dry, red, and slightly brown in the centre. Urine 1020, acid, clear, no albumen. Temperature 100°. No abnormal sign detected in liver, spleen, or lungs.

October 18th.—Had a slight rigor this morning, the temperature rising to 104·8°, and falling at 2 p.m. to 99·2°.

21st.—Had another rigor, with temperature 103·8°, falling to 100·2°.

23rd.—Memory failing, looks very pale and ill, and has occasional clammy sweats.

25th.—Had a slight rigor yesterday, the temperature rising from 99° to 102·4° and then falling to 96·6°. Murmurs louder, but no other change. Mind wanders.

27th.—Severe rigor. Temperature 104°, and then falling to 98°.

November 1st.—Complains of feeling cold in the legs, although they are not cold to the touch. Temp.: p.m. 102°.

3rd.—Yesterday had a sudden attack of severe dyspnœa attended by great pain in the abdomen, lividity of surface and cold sweats, the temperature falling from 101·8° to 96°. The pulses at wrists were small and feeble. Cardiac murmurs louder and rougher.

November 3rd.—Temp.: p.m. 98·6°, very pale and weak, sweats profusely, has delusions. Pulse 152, very feeble, not felt in tibials. Great abdominal pain, not increased by palpation.

4th.—Pulse cannot be counted at wrists. Heart's beat 112, irregular, feeble. Both hands and legs cold. No pulse felt in tibials of either foot. Bluish discolouration of skin of left calf; anæsthesia of both feet; no pulse felt in femorals, complains of pain all over abdomen. No abnormal dulness, but tenderness in lower part.

Since midnight has been passing almost continuously very offensive liquid fæces. Temp. 97·4°.

11.30 a.m.—Pulse 104, small, but easily felt. Feels easier, moist sounds all over both lungs. Died exhausted. Temperature before death 95·8°.

Post-mortem examination (Nov. 5th) by Dr. Hadden. In each femoral artery at origin of profunda is a large embolus blocking up the vessels and having soft, partly adherent clot above and below. The emboli can be distinguished from the adjacent clot and resemble exactly the vegetations on the mitral valve.

In the superior mesenteric artery is also an embolus firmly adherent to the vessel and surrounded by organised clot. Ileum and lower part of colon and sigmoid flexure gangrenous. Slight recent peritonitis. Heart slightly enlarged. On mitral

valve on both aspects are numerous large ulcerating granulations; the chordæ tendineæ of one flap are broken through.

Several recently ulcerated surfaces can be seen which correspond very closely to the surfaces of the emboli in the femorals, and some recent clot is attached to the vegetations.

Spleen: a few old yellow infarcted patches and one, comparatively recent, undergoing decolourisation.

Kidneys: several infarcts of different ages, structure otherwise healthy. Lungs œdematous. Brain healthy.

So many cases of ulcerative endocarditis have been reported within the last few years that some apology is needed for drawing attention to the symptoms and diagnosis of the disease. The cases are, however, always full of interest during their progress, and although the diagnosis becomes daily more certain the etiology of the disease is still obscure, while the treatment seems to be entirely without result.

With regard to the etiology of the cases under consideration, in only one (No. 3) did the attack appear on admission to be associated with acute rheumatism, whereas in five (Nos. 1, 2, 3, 4, and 7) the acute process apparently supervened on old-standing cardiac disease. This corresponds with the statement of Goodhart ('Path. Trans.,' Dec., 1881) that in the majority of cases chronic disease precedes the ulcerative condition.

Dr. Goodhart suggests that all cases may be associated with some inflamed spot in which a vegetable organism could grow, and it is worthy of note in connection with this suggestion that in two of the cases in which there was no previous history of rheumatic fever there was a history of injury; in one (No. 8), only a week; and in the other (No. 7), fifteen months before the commencement of symptoms. The latter patient, however, had post-mortem evidence of chronic valve disease. In Case 2, where there was a previous history of rheumatic fever and subsequent palpitation, there had also been an injury four months before admission. In none of these cases, however, was there any external wound.

No case was associated with acute pneumonia at its commencement like those recorded by Osler ('Trans. Int. Med. Congr.,' 1881) and Gulliver ('St. Thomas's Hosp. Rep.,' 1882).

In one case only (No. 6) was there evidence of renal disease on admission, and that with a previous history of scarlet fever. The same patient had not had rheumatic fever ; the heart, however, was found to be enlarged on admission, and although at the post-mortem examination the disease of valves appeared to be acute, it is possible that this had supervened on some slight valvular disease which with the nephritis may have resulted from scarlet fever.

With reference to Lanceraux's views as to the association of the disease with malarial cachexia it is worthy of note that one patient (No. 1), although she never suffered from ague, lived in a very damp, low-lying place, Great Bookham, and another (No. 7) had had "Roman fever" several times.

The disease was correctly diagnosed during life in most of the cases, but, as necessarily must happen, in some of them only after some days of observation. Case 5 was sent up to the hospital as typhoid fever, and in the history of diarrhœa, sickness, and prostration, lasting a fortnight, presented considerable similarity to a moderately severe attack of that disease. There was in addition tenderness in the splenic region and tumefaction of the abdomen. There were, however, no typhoid spots, and the motions after admission were of healthy colour and consistence.

The course of the temperature was much more irregular than that usually observed in typhoid fever, varying on one occasion nearly five degrees in four hours, and being on some days lower in the evening than in the morning. There were no rigors throughout the illness. The presence of a murmur without previous history of rheumatism was a suspicious circumstance, but even that might have been explained by the attack of scarlet fever from which she suffered at the age of nine years. The diagnosis was confirmed by the occurrence of right hemiplegia shortly before her death.

Case 7 presented some difficulty. There was a distinct history of malarial fever, and for two months and a half before admission the patient had been subject to occasional rigors, though not living in an ague district. In addition he had lost his memory, become depressed in spirits, and had some muscular twitching. He was supposed by one doctor to have commencing general paralysis, but there were no characteristic tremors and

no exalted delusions. The occurrence of hemiplegia before admission might have been explained at his age by disease of arteries, though the presence of cardiac disease lent force to the idea that it was the result of embolism. The facts which after his admission led to the supposition that an infective embolic process was going on were the irregular pyrexia and occurrence of pain in the splenic region. The spleen, however, could not be felt.

Case 8 was thought, on admission, to be possibly one of pyæmia, due to an injury some weeks before. His temperature ran a very irregular course, he had numerous rigors and profuse sweating. The occurrence of blocking of both femorals with subsequent gangrene of legs and very offensive constant diarrhœa shortly before death, taken in association with the signs of cardiac disease, led, however, to a correct diagnosis.

In Case 2 no post-mortem examination was allowed, so that the diagnosis was not verified. On admission the case appeared to be one of chronic cardiac disease without very severe symptoms. It was found, however, that there was a slight rise of temperature at night. Shortly after admission there was noted an alteration in the cardiac murmurs, although no acute rheumatism was present. The occurrence of left hemiplegia without loss of consciousness left very little room for doubt that the patient had an embolus in the right middle cerebral artery, and the further alteration of the heart-sounds, together with irregular pyrexia and enlargement of spleen, confirmed the diagnosis of ulcerative endocarditis as far as could be done without post-mortem examination.

In Case 4 the regular occurrence of rigors at about the same time every day suggested the possibility of a malarial cause, although there was no history of exposure to a malarial poison, and the case presented some similarity to that described by Dr. Bristowe in the 'British Medical Journal' for May 29th, 1880. The case, however, did not yield to anti-malarial remedies and the course of the temperature was soon seen to be pyæmic in its type. No other cause than the cardiac disease could be discovered for this irregular pyrexia. The case is noteworthy in that the patient lived nine months after the first occurrence of rigors and for at least five months of that period he had very severe fever. The spleen was, however, the only organ

in which infarcts were found visible to the naked eye, and they were not numerous. The post-mortem appearances suggested the idea that the ulcerative process was approaching a favorable termination, and had it not been for the renal disease which supervened under observation the patient might have recovered. It should be mentioned that the rigors from which the patient suffered almost daily for the first six weeks after admission ceased almost entirely shortly after the commencement of the administration of arsenic. The course of the temperature, however, did not seem to be affected.

The remaining cases presented little difficulty in diagnosis.

With regard to the post-mortem appearances it may be mentioned that four of the eight cases had hemiplegia from embolism of the middle cerebral artery. In three the hemiplegia was left-sided. According to Rosenstein (Von Ziemssen's 'Cyclopæd.') and Cayley ('Med. Times,' November, 1877) embolic obstruction of the larger vessels is rare in infective endocarditis. In one case (No. 8) large embolic masses resembling exactly the vegetations in the heart were found in the femorals and superior mesenteric arteries.

SKETCHES OF AN EGYPTIAN CHOLERA HOSPITAL.[1]

A PERSONAL NARRATIVE.

By THEODORE DYKE ACLAND, M.D. Oxon., M.R.C.P.,
LATE MEDICAL SUPERINTENDENT OF THE EGYPTIAN MILITARY CHOLERA HOSPITAL, AND PRINCIPAL MEDICAL OFFICER OF THE EGYPTIAN ARMY.

Some apology is necessary for the publication of the following pages. They contain nothing more than a narration of events which occurred in Egypt during the latter half of the year 1883, as witnessed by a single observer. It will be found that some of the subjects which are here dealt with have already become matters of past history, such as, for example, that which relates to Koch's discovery of what he has called the comma bacillus; other questions, such as those concerning the method of spread of the disease, have been raised, only very briefly discussed, and in some instances dismissed without an answer. Without entirely re-writing the paper it seemed impossible to remedy these defects, the gravity of which are fully recognised by the writer. To re-write the paper would have been to destroy its original form and therefore to take away whatever grounds there may now seem to be for its publication, so that it has been determined to let it remain as it was when read before

[1] A paper read before the St. Thomas's Hospital Medical and Physical Society, and published by request of the Committee.

the Physical Society, making only those verbal corrections which seemed absolutely necessary.

The events of which the record will be laid before you concern only a small part of the community; this, however, makes them, none the less interesting, since from them, something may be learned of the course of an epidemic amongst a given body of men, mostly in the prime of life and under certain known conditions of health and residence. Besides this the necessary measures of isolation and precaution were more easily carried out, and any defects in administration more easily remedied than in those cases in which the authorities had to deal with the mass of the population. Many others are far more competent to give the history of the epidemic as a whole, so that the more general considerations have only been lightly touched upon, or altogether disregarded, while your indulgence is craved for some inevitable egotism if this paper assumes the character of a personal narrative.

Sent out at short notice and with no time for special preparation, Dr. Gulliver and I arrived in Cairo on the 1st of August, 1883. We there reported ourselves to Sir Guyer Hunter, placed ourselves at the disposal of the Conseil de Santé, which is the supreme sanitary authority in Cairo, and were told off to our several duties. To Dr. Gulliver were given certain beds (about thirty in number) in the great Civil Hospital, Kasr-el-Ain, while my services were requisitioned by Sir Evelyn Wood, then Commander-in-Chief of the Egyptian army, which numbered between 5000 and 6000 men.

To anyone unaccustomed to such scenes the condition of Cairo was very strange. There was an air of desolation about the place, the shops were shut, and the streets were almost deserted by their inhabitants. The air was thick with the fumes of innumerable fires burning in the streets, which during the day made the air heavy with their smoke and during the night cast a lurid glare on the crouching groups of Arabs who hovered round and from time to time added fresh pitch or sulphur to the flames. At every turn scenes such as Defoe describes in his 'History of the Plague' presented themselves, and the general gloom found no relief in the universal topic of conversation, which was of cholera and of nothing but cholera.

The scene of my future work was at Abbassiyeh, a small village

situated on the edge of the Arabian desert, three miles and a half from Cairo. In or round it were huge barracks capable of containing about 15,000 men. These were occupied partly by English, partly by Egyptian troops; it is with the latter that this narrative is chiefly concerned.

Disposition of troops.—1. At this time the Egyptian army consisted of two brigades, the first commanded by Gen. Grenfell, with English officers, and consisting of the 1st, 2nd, 3rd, and 4th Battalions.

2. The 2nd Brigade, made up of the 5th, 6th, 7th, and 8th Battalions, in which the officers were Arabs or Turks.

3. The cavalry and artillery, each about 600 men, with English field officers.

The cavalry was stationed at Gizeh, the 6th Battalion was first at Abbassiyeh, then at Törah, returning again to Abbassiyeh, while the 1st Battalion was at Alexandria.

These details are given because it will be seen further on that the troops to the south of Cairo suffered from cholera far more severely than any others. The daily average number of men in or round Cairo during the epidemic was 3645.

Medical organisation.—Up to this time the medical organisation of the Egyptian army had been very similar to the old English regimental system—each battalion had a hospital, a doctor, and a pharmacien, and the whole well being of the department was practically under the control of the Conseil de Santé, who found new medical officers when required, and who were responsible for the due equipment of each hospital with drugs and appliances.

In practice this system worked as badly as possible. Many of the hospitals in the native battalions were dirty and untidy, and in some, conditions existed sufficient to cause disease in previously healthy persons. Only to mention that in two of them a latrine, which is Arabic for a cesspit, ventilated directly into the wards. The supply of drugs and appliances was most insufficient, neither iodoform, ether, morphia, carbonate of ammonia, or such ordinary drugs were to be found. In the cavalry hospital, where there were often thirty cases of wounds, there was not a surgical instrument of any description, the medical officer having lost his pocket case! In most of them there was not a splint of any kind, and such as had them had

those which were as bad in construction as in design, while in the whole army there did not exist a stethoscope, a thermometer, a morphia syringe, an ophthalmoscope, or any appliance for testing urine. In addition to this all the serious cases (those of them, at least, that were recognised as such) were removed from the care of the battalion doctors to Kasr-el-Ain, so that all responsibility was removed from those who should have had charge of the sick in each battalion. Most of the pale cases were put down as "anæmie," regardless of whether they were suffering from phthisis, malaria, cardiac disease, or any other sufficient cause for their paleness. The hospital attendants, too, were quite untrained for their work, and in many cases never had a chance of getting a training, since they were changed *every week*. It is not to be wondered at that the strain of an epidemic should prove too much for a department whose organisation was such as this. While this was the state of the hospitals, previous to the English occupation, conditions had existed in and around the barracks which were calculated seriously to interfere with the health of the troops.

Drainage.—From three of the great barracks the soil was removed by a sewer which emptied itself into the sweet-water canal. When the canal was empty (during low Nile) the mouth of the sewer was blocked, and the filth was allowed to accumulate behind the obstruction. In this way the system of sewers became merely an elongated cesspit and with no other ventilating shaft than the barrack latrines. When the Nile rose and the obstruction at the mouth of the sewer was removed the pent-up filth of many months was allowed to mingle with the sweet waters of the canal, which provided water for washing and drinking purposes to the inhabitants in the country beyond.]

During the occupation of Abbassiyeh by the English, much had been done to remedy these defects, but much remained to be done. A modified dry-earth system had been substituted for the old latrines, which had been blocked up; the solid excreta were received in buckets and removed three times a day, while the water always used by natives was drained into catchpits and removed in a similar manner into the desert.

Water supply.—The water supply for the troops was obtained from the great Cairo Waterworks whose intake is just above Bulāq. It is supplied both filtered and unfiltered; in the

barracks it was passed through large earthenware filters (zeers), and after filtration was bright and sparkling.

It is with the greatest difficulty that the natives can be persuaded to drink the clear liquid; they have always been accustomed to drink it thick, and seem not to like it when deprived of its body. Notwithstanding all this, and notwithstanding the alarming reports of canals filled with carcases of beasts who had died of bovine typhus, and microscopic investigations showing animalcules and bacteria in the river water, there is no evidence to show that the spread of cholera *amongst the native troops* was influenced by the water supply.

In the month of June rumours of an outbreak of cholera began to be heard. The first case officially reported occurred on June 22nd, though Sir Guyer Hunter believes he has proof that it was prevalent in May and had been endemic for many years. Towards the middle of July it appeared certain that an epidemic was at hand, so that it was necessary to make preparations to meet the emergency.

Preparations.—An old building, already almost in a ruinous condition, was cleared out, cleaned, and fitted up for the reception of such as might be attacked by cholera; a quarantine camp was established, and special directions were issued to all medical officers with regard to the treatment of diarrhœa, and an army order was issued directing that all drinking water should be *boiled* and filtered; instructions relative to the method of dealing with cholera patients were circulated, and on July 23rd the hospital was opened for the reception of patients. All these preparations were made under the direction of Surgeon-Major Rogers. Had Dr. Rogers been allowed to remain all would have gone well, but the appearance of cholera amongst the English troops was the signal for his recall to his duties at Heluan.

At the time of my arrival at Abbassiyeh, there were at the Cholera Hospital:

3 native medical officers, 1 pharmacien, 1 clerk, 1 storekeeper, 1 sergeant-major, and 24 infirmiers, 2 cooks, 1 driver, 1 officer, 2 non-commissioned officers, and 13 men on guard. So that as far as numbers were concerned there was no lack of persons to carry out the necessary details. The hospital was a large eleven-roomed, two-storied house, capable of holding from

fifty to sixty patients. The upper rooms were used for serious cases, the lower for doubtful cases or convalescents. The place was admirably adapted for the purpose—it was isolated, it contained enough room to make the needful separation of cases possible, the windows were large and numerous, and as there was not a pane of glass in the building, the ventilation was most efficient. The floors throughout were of stone and the walls plaster lime-washed.

The strictest attention to all cases of diarrhœa was urged on medical officers of battalions and they were required to keep in readiness a stock of standard remedies, which were served out from the "Red Hospital" Dispensary (this was the name by which the Cholera Hospital was generally called). All supposed cases of cholera were to be sent up immediately as far as the cordon outside the hospital, and here the case was examined by the medical officer on duty, and if it proved to be one of cholera the patient was admitted. If the ambulance or stretcher was in any way soiled it was disinfected, and in no case were the regimental appliances allowed to be brought within the line of the guard. Each patient had to bring with him his own blanket and sleeping mat, his accoutrements were left in his battalion, and his uniform was boiled and disinfected. If after this treatment it was worth having, and the man recovered, it was given back to him; if not, it was burned. Each patient on entering hospital was supplied with a suit of unbleached linen, consisting of drawers, shirt, and jacket. Of these there was an unlimited supply, so that no excuse was allowed for using those that were soiled; after use they were soaked in carbolic acid, boiled, again put in carbolic acid, dried in the sun, and then stored for further use in the hospital *only*. All articles of bedding or clothing used in the hospital were treated in a similar way after having been once used by a cholera patient. Everything that belonged to a patient who died was burned at once, and subsequently, on the closure of the hospital, everything which had been used was destroyed except a few articles of metal, and the iron bed frames, which were carefully scrubbed, and left exposed to the full heat of the sun for several days, and finally repainted.

The free use of disinfectants was insisted on throughout the hospital. Water-cans filled with carbolic acid stood in every

ward, and the floors were frequently sprinkled with the solution. The slightest soiling of the floor was immediately washed up. No one was allowed to leave the wards without washing his hands in carbolic water, and no infirmier or water-carrier was allowed to go beyond the cordon without first washing all over in some disinfectant, and leaving all his hospital clothes behind. All excreta were removed at once from the wards, and the utensils containing them were rinsed and disinfected before being replaced. They were emptied into large iron buckets containing chloride of lime which stood outside the wards, and as occasion required these buckets were removed and their contents buried in trenches to leeward of the hospital, and there covered with lime and sand. From time to time some pitch was burned in these receptacles, so that they were kept perfectly sweet.

Mortuary.—All those who died were removed at once to the mortuary, where they were washed with chloride of lime, wrapped each one in his own blanket, and buried in the desert about one and a half miles to leeward of the hospital. In order to ensure proper interment the graves were made of a minimum depth of five feet. It was specially important to see this regulation properly carried out, since the ordinary method of burial is to lay the body in a shallow trench on the surface of the ground, and to cover it with a mound of sand and stones, a ready prey to any vagrant animal in search of food.

It must not be supposed that all these arrangements and precautions were carried out without some difficulty; in fact they required such constant attention as to leave no time for any but work of the most practical kind. There is only one way of dealing with an Arab. Never believe him, unless you know what he says to be true, and always assume that unless prevented he will never do to-day what can be put off till to-morrow.

Under the old system no record had, as a rule, been kept of the cases in the battalion hospitals, and this led to serious mistakes being made with regard to patients who were transferred from one place to another. It was, therefore, forbidden to send any case to the cholera hospital without a written statement of his condition on leaving his regiment; and for the first time every case was compelled to have a bed ticket

stating his disease, treatment, history, and diet, and nothing was allowed to be issued without an order in writing from one of the medical officers. To anyone acquainted with a well-regulated hospital these details will seem a matter of course; but a single instance will show the confusion which resulted from the neglect of these, the most ordinary details of hospital administration. Medicines were issued from the pharmacy on the verbal order of a medical officer; they were sent up to the ward without a label, and from the manner in which the medicines were administered, and from the fact that it was by no means thought derogatory to use a patent medicine, there was every opportunity for administering an unmeasured quantity of an unknown drug to the wrong patient.

Food supply.—Thanks to the most excellent hospital commandant, Major Wingate, there was never any real difficulty about food supply, except what was inevitable from the cook's general impression that rations were quite good enough food for cholera patients, and that it was unreasonable to expect any beef tea to be ready at night.

The nursing staff of the hospital consisted of men sent from the Kasr-el-Ain Hospital as trained infirmiers. It is difficult to know how to criticise them fairly. They were not nurses, or trained, at all. They had been seamen in the merchant service a fortnight before they received their training at Kasr-el-Ain—a training for evil which they might well have been spared before they were sent to look after our sick.

They had many good points; they were brave to a degree of utter disregard of all caution, kindly, to the extent of thinking the patients' wishes were of far greater importance than the doctors' orders, and untruthful beyond all conception, being, as it seemed, unable to speak the truth even if it were to their own advantage. One of the number was entrusted with the functions of barber-surgeon, and it was held to be quite in accordance with the modern principles of our art to allow him to cup a delirious cholera patient by suction through the tip of a cow's horn. The barber-surgeon of the new military hospital whose cupping horns I have claimed as a token that his surgical career is at an end was reported to be a very superior man. He could neither read nor write, but I took a good deal of trouble to teach him to bandage properly, and when he

had learnt this, proceeded to make him take temperatures. After some days, my despair may be imagined on finding that he thought it quite immaterial which end of the thermometer he applied to the source of heat.

Precautions.—Time would fail me if I attempted to detail all the precautionary measures which were taken.

It must suffice to say that a Sanitary Board was established, the most stringent regulations issued with regard to cleanliness, the treatment of all cases of cholera and diarrhœa, all infected districts were placed out of bounds, and, what is far more important, great pains were taken to see all the regulations duly carried out. Under the circumstances this was a matter of no small difficulty. Two of the native officers deserve special mention; without their help it would have been well-nigh impossible to do what was done. The one, Captain Ahmed Fehmi (my interpreter), staff-captain in the cavalry, served me faithfully and well, ever ready to assist me in all my work, shrinking from nothing he was required to do, and becoming the one native element of order and attention to duty on whom I could rely. The other, Ahmed Fuhdli, the most intelligent and painstaking of my native medical officers, taking pleasure in his work, and really wishing to give all the help in his power. It was on these two that the bulk of the labour fell.

A quarantine camp was established, and eventually a diarrhœa camp, to which all cases from whatever cause were sent for observation. From the latter only one case was removed to the cholera hospital. All men returning from furlough were kept under observation for a certain number of days, and no one was allowed to return to barracks in the same clothes as those in which he had been to his home.

Clinical report.—Such were the measures taken to prevent the spread of the cholera and to secure fitting treatment for those who might be attacked. To those who have not seen the disease it will perhaps not be uninteresting to give a brief sketch of a typical case. The person attacked may feel perfectly well almost up to the moment of seizure, he will go to bed, and on rising in the morning will feel an inclination to pass a motion, and this he will do without any pain or discomfort; he may even then feel well, but the desire to go to stool comes on again

and he may vomit. Soon persistent diarrhœa sets in, the motions being liquid but containing bile, the vomited matters up to this time being the contents of the stomach. Before long, however, the diarrhœa increases and frequent liquid evacuations resembling ricewater in appearance and consistency are passed with an evident sense of relief. The vomiting too becomes profuse, enormous quantities of watery fluid being violently ejected from the stomach. At this period the prostration begins to be great, thirst, almost insupportable, comes on, and the patient begins to suffer agonies from violent cramps in his limbs and abdomen. The temperature begins to fall and may reach as low as 94°, the pulse becomes feeble and rapid and soon ceases to be felt at the wrist, the extremities are clammy, but above all, most characteristic of the disease, is the change which takes place in the aspect of the patient. In as short a time as two hours his eyes become sunken, glazed, and fixed, his cheeks fall in, his lips are blue, and the whole aspect changes almost to that of a corpse. The voice becomes shrill, hoarse, and whistling, and the sick man as he tosses in his pain incessantly utters his feeble cry for water. During this period as a rule no urine is secreted, but liquid motions continue to flow from the bowels in almost incredible quantities. Such is the algide stage, or stage of collapse, and from it but few cases recover (about one third). If the patient is going to die the temperature in the axilla often rises rapidly, and a well-marked cadaveric odour is perceptible even three or four hours before death. If recovery is going to take place, the diarrhœa becomes less frequent, bile returns to the motions, the temperature gradually rises to normal, and the pulse again becomes perceptible at the wrist; the stage of reaction is reached from which the patient generally recovers.

The general plan of treatment was, in the first place, to attempt to stop the preliminary diarrhœa. This was done with Dover's powder, catechu, bismuth, lead, and opium, or other such ordinary remedies as occasion might require. 2. By giving suitable food; this is of the utmost importance. 3. By rest in bed, warmth, and stimulants. When the stage of collapse was once reached, and the purging and vomiting had assumed that violent character which they so often do in this disease, all remedies by the mouth seemed useless, but the subcuta-

neous injection of ether in one case prolonged life for some hours, the patient rallying immediately after the dose had been given,[1] and another case eventually recovered. Sulphate of quinine in four-grain doses frequently repeated seemed to produce good results.

The most frequent complication was suppression of urine, accompanied with delirium, generally of the more sthenic type. All the cases who survived the collapse stage, except one, recovered; although in two, the delirium continued for ten days or more, and in one case slight mental weakness remained for some weeks. The ordinary remedies were used in these cases: 1. Dry cupping to the loins. 2. Diuretics, as digitalis and acetate of potash. 3. Fluid diet, especially plenty of barley water.

Other complications were not numerous, and I will only mention two cases, remarkable from the fact that they are rare as following cholera. In the first case an officer who had had a severe attack of cholera remained for several days in a state of violent delirium. When he first became conscious he complained of loss of power in the right arm, and the loss of power was undoubtedly complete and continued so for at least two weeks. He had no headache, no vomiting, and no optic neuritis. The muscles wasted rapidly, but power gradually returned, so that at the end of six weeks he had regained the use of all, except those supplied by the musculo-spiral nerve; in fact he presented the typical features of a case of wrist-drop. It will be as well here to mention that the patient had never been treated with lead. This fact is noticed because it has been suggested that the lesion followed from the means taken to effect a cure. Under a course of treatment consisting of hot and cold douches, friction, with internally iron and strychnine, he recovered entirely, so that now he can write and even salute with ease.

The other case was one in which either the algide or cold stage did not occur, or else was of so short a duration that I never saw it. Be that as it may, the patient was seized with sudden purging, vomiting, and cramps, that he had the look of a cholera patient, that his pulse was almost imperceptible, and

[1] The ether was given in one- or two-drachm doses every two hours, according to the condition of the patient; no sore or sloughing was in either case produced at the point of puncture.

yet his temperature on admission was 104° and remained so for many hours. He was convalescent in forty-eight hours and recovered rapidly. It was at first doubtful whether this was a case of cholera, yet the symptoms were not definitely those of any other affection; neither the stools nor the subsequent course of the malady were those of dysentery, and the appearance of the patient, his complete consciousness, were against its being sunstroke. A few such cases have occurred and been recorded in India, so that it seems reasonable to consider this an abnormal case of cholera. You will at the same time remember that although the temperature in the axilla is generally at first subnormal, in the rectum it is often high.

Of the pathology of the disease it is not possible for me to speak from my own observation. The multifarious duties required of me made it impossible to conduct any of those minute investigations necessary for obtaining a satisfactory result. At the same time Prof. Koch told me in conversation that he found in the intestines of patients suffering from cholera a form of bacterium, which up to the present time he had been unable to recognise, but that by no method of inoculation had he been able to transmit the disease to animals, so that he could not say whether this organism was a cause, a consequence, or even an invariable concomitant of the disease.[1]

This statement seemed to me more worthy of the character of the observer than those which have been made in England and France, on the one hand exalting these observations into a great discovery of the cholera bacillus, and on the other declaring that the so-called discovery is only due to faulty observation, since all this and more has been found by Lewis and Cunningham years ago and is only the natural result of decomposition.

[1] This passage has been left as it was written, just a year ago. The question of the etiology of cholera seems to be as much a matter of dispute as ever. It must, however, be admitted that although Prof. Koch's deductions may be entirely erroneous, yet they are founded upon such a mass of patient investigation and laborious research that it will take much more to upset them than the hasty conclusions which have been drawn by many of the writers in our medical and scientific journals.

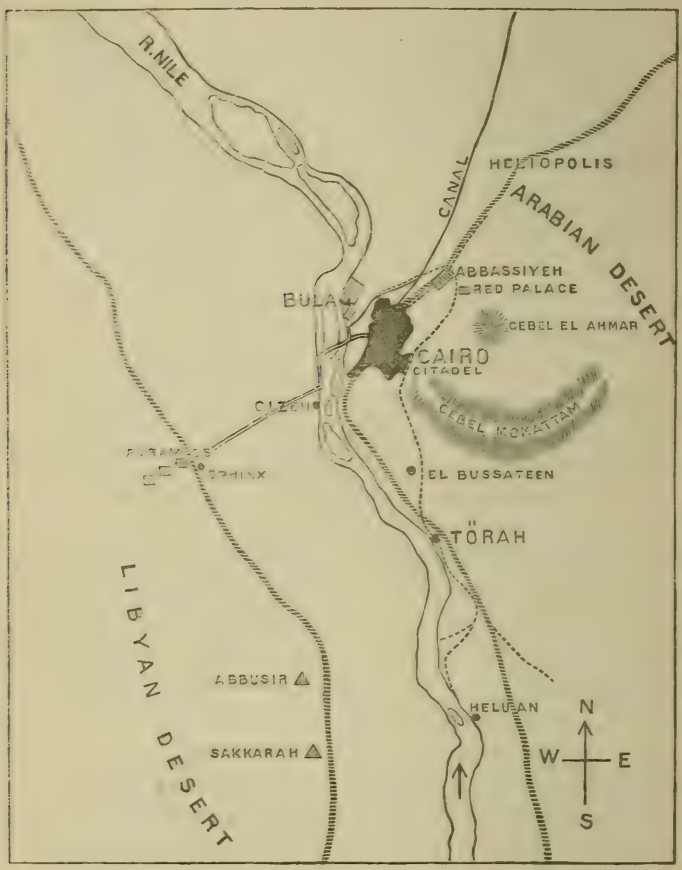
Table showing the Admissions and Deaths in all the Egyptian Military Cholera Hospitals from July 15 *to August* 25, 1883.

	Admissions.			Deaths.			Total.	
	M. R.	T.	K. E.	M. R.	T.	K. E.	Admissions.	Deaths.
Artillery	28	...	...	10	...	...	28	10
6th Battalion	7	8	16	...	1	8	31	9
5th „	5	...	1	3	...	1	6	4
7th „	5	...	1	5	...	...	6	5
8th „	4	...	1	1	...	1	5	2
1st „	...	...	...	...	...	...	...	...
2nd „	1	...	1	...	...	1	2	1
3rd „	...	...	1	...	...	1	1	1
4th „	2	...	1	...	...	1	3	1
Cavalry	1	...	...	1	...	...	1	1
Camel Corps	...	...	1	...	...	1	1	1
Band	...	...	1	...	...	1	1	1
Hosp. att.....	1	...	...	...	...	...	1	...
Total.....	54	8	24	20	1	15	86	36

M. R. = Maison Rouge. T. = Törah. K. E. = Kasr-el-Ain.

Spread of the disease.—The method by which cholera is spread is a matter which excited has and still is exciting much discussion, so that it is interesting to trace the course of the epidemic amongst the native troops in or round Cairo. On glancing at the tables one fact stands prominently forward : that out of 86 cases, 59 occurred in two regiments, the 6th and the Artillery. Is there any possible explanation of this fact? The facts are these. Cholera was very prevalent in Bulāq, which was the most infected district in Cairo, so much so, that about the 22nd of July the inhabitants were evicted and transported up the Nile to Basatin, while many of their houses were burnt. Up to this time no case had occurred in the 6th Battalion, which was camped at Törah. On the 23rd there was one case, and three days afterwards an epidemic broke out, so that within the next four days 23 cases occurred in this one regiment. The troops were then moved to Abbassiyeh and there were only 6 cases subsequently. This may be merely a series of coincidences, but it should be noted that Törah is directly to leeward of Basatin and that Abbassiyeh is directly to windward of Cairo. (By windward is meant "north" and leeward is meant "south;"

during the summer the direction of the wind is almost invariable, blowing up the Nile valley from north to south.)



The Artillery were quartered at Gizeh palace, from which place they moved (camping one night on the road) to Abbassiyeh, and it was not until two days after their arrival there that any case occurred amongst the main body of troops, and even after the disease had broken out amongst these latter battalions only 27 cases occurred, which is less than in either of the other two regiments which were quartered at the outset to the south of Cairo. Is the deduction warranted that in the first place these two battalions were infected by being situated to *leeward*

of an infected district under suitable conditions for the development of the disease; and secondly that the Artillery, already infected with the disease, carried it with them to Abbassiyeh? Here, owing to the remaining troops being to windward of Cairo, and from the fact that every possible precaution was adopted to prevent the contact of men with infected districts, to ensure an unpolluted water supply, and to place them under the best sanitary conditions, the disease did not make headway, and therefore was less fatal than under the conditions which existed at Törah.

Such inferences would be disputed by those who believe that cholera is not contagious, and the facts would be explained in some other way. It would be impossible here to deal even in the most superficial manner with the evidence which has been brought forward for and against the theory of the spread of the disease by contagion, by observers in all parts of the world; it must suffice merely to consider the facts which are here narrated. Many of the differences of opinion which have been expressed on this subject are doubtless due to the various meanings which individuals apply to the word "contagion." By it is here meant the property by which in certain sorts of diseases the affected body causes a disease like its own in other bodies (Simon). This definition involves no theory implying the existence of a particulate or gaseous *contagium*, nor is it material for the purpose whether the contagion is immediate, as syphilis generally is, or intermediate, as enteric fever generally is. The one disease being, as a rule, though not invariably, propagated by actual contact; the other, as a rule, by intermediate contact, as by contamination of water or other fluid by typhoid excreta. It is conceivable that a disease like cholera should be spread by water, by air, or by actual inhalation or swallowing of the cholera dejecta; it is probable that certain conditions of the atmosphere and of the persons affected are essential for the propagation of the disease. Dr. Snow, Dr. Brydon, Mr. Simon, Dr. Marston, Sir W. Gull, and many other observers of the highest eminence have shown that these and other methods of transporting the disease exist. If this be so it may be fairly assumed that the disease is capable of spreading from one person to another, and that the existence of this property is recognised by such terms as viable, communicable, contagious.

The records of the English hospitals in Egypt (which have been kindly placed at my disposal by Dr. Marston) are most interesting as throwing light on these questions. There were during the epidemic 196 men employed in the Army Hospital Corps. Of these 18 were attacked, and 14 died of cholera. This gives a percentage of 9·2 of cases and 77·7 per cent. of deaths. Amongst the main body of troops the percentage of cases was only 2·94, *or less than one third* of the number that occurred amongst those who were in contact with the sick. During this period there were 188 officers attached to the English army of occupation; of these only three were affected with cholera, which is again a little less than *one sixth* of the number which took place in the Army Hospital Corps. It is necessary then to suppose either that the hospital staffs were peculiarly liable to the disease, or that the hospitals were under conditions particularly favorable to the development of the disease, or the disease must have been transmitted from the sick to the healthy. Of the officers attached to the Egyptian army, those who suffered most had been specially zealous in their attention to the sick, one died, two had cholera severely, one suffered from violent purging and vomiting, while a fifth, after being ill for a week with diarrhœa, developed enteric fever, which was also contracted by his small Indian boy who nursed him. There is abundant proof that cholera may be spread by dissemination of the evacuations, but as the contagium has never been isolated it is impossible to say that the occurrence of cases in those places where the contagium is not known to exist is independent of it, and that therefore in those cases the malady arises spontaneously. In order that the disease shall spread at all three things are necessary:

1. That the condition of the atmosphere as regards temperature, moisture (and, as appears from numerous observations, deficiency of ozone) should be such as to favour the development of the disease.

2. That in the place where these conditions exist, individuals (probably of the human species only) should be present to give expression to the disease.

3. That the individuals exposed under such circumstances to the influences which convey or generate the materies morbi should be susceptible to the poison.

So that the fact that it is impossible to explain the appearance of cholera in certain districts where, as far as is known, no previous cases have existed, is in reality no argument against the idea of a specific poison or contagium, since this, of whatever nature it be, must lie dormant until conditions suitable for its development arise. Just in the same way as in a crowded thoroughfare if the traffic be suspended grass will grow up between the stones, showing that had circumstances favorable to its growth existed, grass would always be growing there, while as long as the suitable conditions did not exist there was no external sign that the place is sown with the spores which fail to come to maturity, so in a cholera area a contagium might remain dormant and give rise to phenomena which are inexplicable from the known premises, except on the ground that the disease can originate *de novo*, a conclusion for which there are no data.

Great difference of opinion has been expressed on these points by those who are familiar with Indian epidemics. But facts which are as conclusive as anything short of actual demonstration can be, are adduced by Mr. Macnamara, Dr. Marston, and others in opposition to the statements of those whose vast experience makes their opinions of the greatest importance, who from the same facts draw the conclusion that cholera is not contagious. It has been shown, both by accident and actual experiment, that water contaminated with cholera stools is capable of transmitting the disease, but the facts which have been brought forward in this paper point to the conclusion that this is not the only method of its transmission, since the supply of water for the two battalions to the south of Cairo was drawn from different sources; and inasmuch as it was taken from *above* Cairo should have been less liable to contamination than that which was delivered by the waterworks whose intake is at Bulāg. Sir Guyer Hunter attributes the excessive mortality amongst the English hospital orderlies to fear. Fear, it is true, may have had some influence in predisposing them to the disease, but it could hardly have caused it independently of exposure to some source of danger from which they might have contracted it.

On comparing the statistics of the English and Egyptian armies it will be seen that while amongst the latter there were

86 cases, or 22 per thousand, amongst the former there were 29 per thousand, a difference of only 7 per thousand, which is not very striking. But the percentage of deaths amongst the English troops reached 73·1 per cent. of those attacked, while amongst natives it was only 41·8 per cent. This may be due in part to the fact that the English troops were less acclimatised than the Arabs, but it also in some measure depends on the fact that enteric fever, alcoholism, venereal diseases, especially syphilis, and dysentery, which were the chief causes predisposing to the malady, were of much less frequent occurrence amongst the native than amongst the British soldiers. In support of this may be mentioned that in the native hospital only one case of enteric fever, and that a doubtful one, came under treatment during three months; that an Egyptian soldier was hardly ever seen the worse for drink, and that no case was admitted into hospital suffering from any form of chronic alcoholic poisoning. The number of cases of venereal disease was small, amounting to only six cases of gonorrhœa, eight of chancre, and two of secondary syphilis; while only three cases of acute dysentery occurred during three months. On the other hand I was assured by Dr. Jenkins, surgeon in charge of the Abbassiyeh military hospital, that the English troops lost more cases from enteric fever than they did from cholera; while alcoholism, dysentery and venereal disorders were amongst the more ordinary forms of sickness; and it is, moreover, remarkable that no less than fifty-three cases of cholera originated in English, while only two originated in the native hospitals. In addition to this it may be said that the disposition of the Arab soldiers was to resign themselves when sick to whatever was in store for them, while the Englishmen did not regard the terrible malady with which they were seized with the same amount of indifference; and it may be that this indifference or resignation, whatever it may most properly be called, and the unquestioning adherence to principle which would cause the sick man almost at the hour of death to ask forgiveness for touching the brandy given him for the benefit of his suffering body, should have some effect in a malady so much dreaded and so liable powerfully to depress the spirits of the person affected with it.

Of the epidemic or endemic nature of the disease it has not been my intention to speak. Whether it was imported from

India or of purely local origin you will find amply discussed in the reports of the meetings of the Epidemiological Society, on the 9th of January and 1st of February. And no attempt has been made to deal with the epidemic as it affected the whole mass of the population. Being a purely local observer it was not desirable for me to do more than to trace the course of the epidemic amongst those with whom I was immediately concerned; nor is it possible even for the highest authorities to have more than a very imperfect knowledge of the general wave of the epidemic, since the mortality returns are absolutely unreliable. Full information on these subjects will be found in Sir Guyer Hunter's reports to the Foreign Office and in his communications to the Epidemiological and Medical Societies.

It may be said that the native sanitary conditions have been held up to unmerited ridicule, and that the organisation of the Medical Department did not deserve such reproaches as have been cast at it. What has been said has been said with the full knowledge that we live in a glass house and can ill afford to throw stones. What answer could we give to an intelligent Arab if he inquired on what principle of hygiene stinking closets are ventilated into the staircases of our houses? And what answer could be given to the question why conditions are allowed to exist in our slums to which the greatest filth of an Arab village, modified as it is by that glorious climate, is beyond measure preferable, and it may well be more healthy? While not forgetting to help our more unfortunate neighbour let us attempt to know ourselves.

Finally, I would add that as far as the Egyptian army was concerned the conduct of the English officers was worthy of all admiration. Ever ready to help in all that was necessary to be done for the relief of sickness or suffering, every one of them did his duty. To General Grenfell, Major Wingate, and after he had been removed by sickness, to Major Haggard I owe my special thanks. Without their ever-ready aid and encouragement little could have been done of what was accomplished. Nor is it out of place here to record my appreciation of the manner in which the English army hospitals were conducted. No institutions are perfect, but of these it may truly be said that, looking at the difficulties of the situation, they were most efficiently managed for the treatment of sickness and the relief

of suffering, while the devotion of the nursing sisters, some of them, we may be proud to think, trained in this hospital, was beyond all praise.

ON SOME ANÆSTHETIC APPARATUS.

By WALTER TYRRELL,
SENIOR ANÆSTHETIST TO THE HOSPITAL.

I.—An Improvement of Clover's Portable Regulating Æther Inhaler.

A long practical experience with Clover's inhaler has led me to introduce the following modification of it, by which the amount of æther vapour and fresh air inhaled, and the amount of expired air set free from the apparatus can be regulated, and brought completely under the control of the administrator without moving the face-piece.

After using this instrument for general purposes in the hospital for nearly two years, I am so well satisfied with its advantages that I venture to describe it as an improvement on Clover's pattern.

Clover's inhaler, although all that could be desired for regulating the supply of æther vapour, makes no provision for the admission of fresh air other than by the complete or partial removal of the face-piece. The air admitted in this way must pass directly into the lungs, mixed with little if any æther vapour, and in an unknown quantity, only to be finally estimated by its effects upon the patient; and when approaching consciousness renders it necessary to again exclude the admis-

sion of fresh air, the sudden change to strong æther vapour often produces choking and troublesome cough.

In fact, the administration is attended with a constant change in the strength of the æther vapour.

Such changes are much more likely to produce choking and respiratory spasm, wherein lies the chief danger of the administration, than the breathing a vapour of almost constant strength.

At the commencement of æther inhalation, it is no doubt a great advantage to cut off the supply of fresh air entirely and make the patient breathe a gradually increasing strength of æther vapour.

Diminishing the amount of oxygen respired, apparently blunts the sensibility of the larynx, for the patient breathes the vapour much more readily, and the inhalation is attended by much less excitement and struggling, and is far safer than the sudden smothering with æther from the leather cone and sponge, or those methods in which the amount of air admitted is unlimited.

But in continuing the administration some fresh air is necessary, and the object I have in view is that this should be admitted without raising the face-piece, and be regulated and as completely under control as the æther vapour.

Ophthalmic surgeons will recognise the advantage of a modification which obviates the necessity of any movement of the face-piece upon which the operator's left hand is constantly resting while fixing the eyeball during an operation. And here I must note, although my space will not allow me to go into details on the subject, that Mr. Marcus Gunn introduced at the Royal Ophthalmic Hospital some years ago such a modification. His plan, however, entailing, as it did, the holding down of a spring, was inconvenient.

The following, then, are the desiderata of a good æther inhaler:

1st. Means by which the anæsthetic can be given gradually, its supply being kept properly under the control of the administrator.

2nd. A comfortable face-piece, which shall fit so closely that all fresh air may be at once excluded from the commencement of the inhalation.

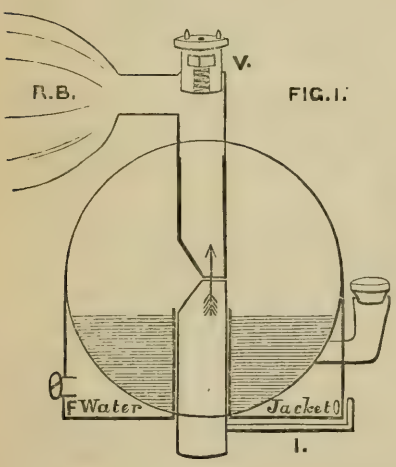
3rd. An expiratory valve which may be kept entirely closed, or which may be allowed to act more or less freely at the will of the administrator.

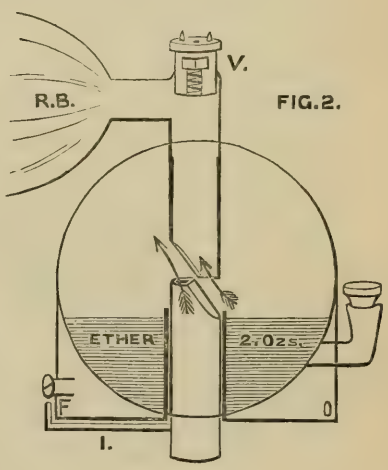
4th. An inspiratory valve, also under the control of the administrator, and so arranged that all fresh air entering thereby may be made to pass over the æther, before entering the patient's lungs.

5th. A soft india-rubber bag, to contain what I may term an extension of the residual air (or rather ætherised air and carbonic acid) of the lungs.

All these requirements are attained by my inhaler, of which a description follows :

Figures 1 and 2 are diagrams of the æther chamber in Clover's inhaler which is identical with the reservoir in my own modification, since it appears to me incapable of improvement.[1]





It consists of a metal sphere to contain the æther, through which passes a metal tube, divided in the centre.

The divided ends of this tube are shaped like a whistle, and the lower half, instead of being fixed as is the upper, is capable

[1] I believe that no full description of Clover's inhaler has been before published, otherwise I should have spared my readers this description of his admirably-designed Æther Reservoir.

of a rotatory movement to be imparted at the will of the administrator.

A glance at the accompanying diagrams will show that when the indicator I is placed at O on the index, the open ends of the divided tube face each other exactly (Fig. 1), so that any expiration or inspiration must pass directly into and from the residual bag, without contact with the æther in the chamber.

When, on the other hand, the indicator is placed at F (Fig. 2), no vapour or air can possibly reach the patient's lungs either from the residual bag or from the outer air (through the inspiratory valve V) without passing over the æther on its way.

It will be seen that the relative positions of the whistle ends of the tube passing through the æther vessel can be altered by the administrator by moving the indicator, so as to ætherise the inspired air, more or less completely at will.

The indicator moves upon a graduated scale, by which the administrator can tell at a glance how much of the air inspired is passing over the æther.

For instance, with the indicator at 2, he knows that half the air passing from the residual bag to the face-piece and *vice versa*, passes directly through the tube, the other half passing over the liquid æther on its way.

The sphere which contains the æther is of such a size as to hold two fluid ounces in any position without overflowing.

In the most usual position for inhalation (with the patient lying on his back), the æther is surrounded by a water jacket, as shown in the diagram, the object of which is to prevent its too rapid cooling by evaporation.

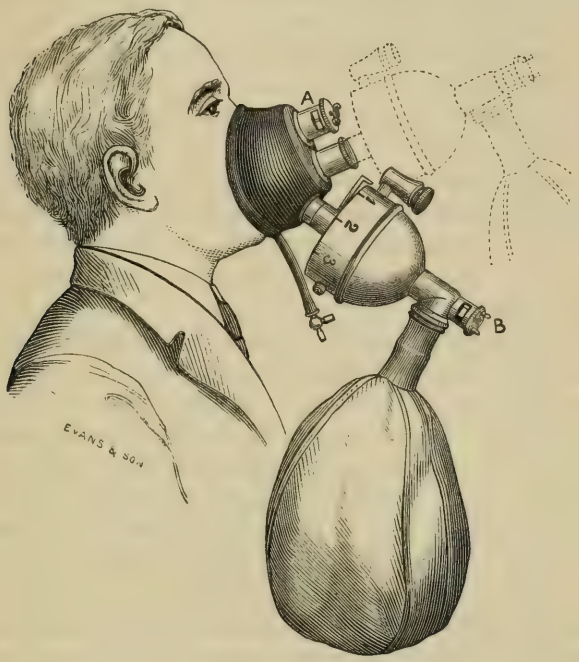
The face-piece I use differs very materially from Clover's. It is made of pure india rubber, of sufficient thickness to retain its form, and backed by a metal plate into which the mountings are screwed. Round its free margin runs a rubber inflatable air cushion, so shaped as to rest upon the face with perfect comfort, while fitting so closely as to be for all practical purposes quite air-tight.

It will be seen from the following diagram (Figure 3) that my æther reservoir is capable of being fixed in either of two different positions.

That shown by the dotted line is the more convenient for

general use, while the lower position is the most useful for eye operations, inasmuch as by it the inhaler is kept quite out of the surgeon's light. The mount, for the time being unoccupied by the reservoir, is secured by a metal cap.

Fig. 3.



In the upper part of my face-piece A is fixed an expiratory valve, such as is used in the administration of nitrous oxide gas, and *it is this valve and a corresponding inlet valve* (B) *that I claim as the chief advantages of my modification.*

By means of a little switch placed upon a moveable metal cap (A), the expiratory valve is kept entirely and absolutely under the control of the administrator, who may allow more, or less, or none of the expired air to escape at his will.

When this switch crosses the centre of the cap A, and the latter is pressed down upon the back of the face-piece, the valve is closed and fixed, and the patient can then only expire into the residual bag; while, if the switch is turned to either side, the expired air escapes freely through the valve, and by

slightly raising or depressing the cap, a regulated and definite portion of each expiration may be allowed to escape.

The tube leading from the æther reservoir terminates in a soft rubber bag which contains what I call the residual mixture of æther vapour, &c.

Finally, between the residual bag and the liquid æther, there is an inlet valve B which is also under control.

With this apparatus I administer æther in the following way:

Placing the *indicator at* O, and having *emptied* the *residual bag* of any æther vapour that may have leaked into it, I apply the face-piece *firmly*, keeping the *valve* A *completely closed*, whilst B *is allowed to remain open.* The inlet valve B is constructed with sufficient tightness to allow no air to pass until the bag has been quite emptied by an inspiration, so that, as a rule, it may be left open during the whole time of administration.

I know that whilst the indicator is at O the patient is breathing directly into the residual bag, none of the air respired passing over the liquid æther (*vide* Fig. 1); nevertheless, a certain amount of vapour leaks from the reservoir through the junction of the whistle ends of the tube in its centre,[1] and in very hot weather, sufficient æther vapour may leak into the apparatus in that way, to produce a sense of suffocation, in which case the cap of the unoccupied mount on the face-piece may be removed and gradually reapplied.

The face-piece being fixed in position, I allow the indicator to remain at O for about a minute or until the patient shows confidence in being able to breathe by respiring freely.

I then revolve the indicator slowly towards 1, making a very slight advance every fifth or sixth expiration.

In about two minutes the indicator marks 1 and in another minute the patient is generally completely under the influence of the æther.

For women and children, I very rarely find it necessary to proceed further with the indicator, except in very cold weather, when the water in the water-jacket (which should be previously warmed to 65° or 70° Fahr.) quickly cools.

With adult men, it is sometimes necessary to go as far as

[1] This is shown as a slight space, which should not really exist; in Fig. 1, with the arrow passing through it.

1½, or with those who have indulged freely in alcohol, to 2; but even in such cases, as soon as the patient has been completely under the influence of the anæsthetic for a few minutes, I can usually turn back the indicator to 1. If at any time during the administration the necessity for fresh air occurs (shown by blueness of surface, and especially by slight involuntary twitchings and jerky spasmodic breathing), the residual bag may at once be partially or completely emptied by turning the switch on the cap of the valve A, thus allowing the expired air to escape whilst fresh air enters in corresponding quantity at B.

Should complete respiratory spasm take place, it is of course wisest to remove the face-piece altogether until natural breathing is re-established. Such spasm, however, very rarely occurs with this method of giving æther.

When the patient is completely ætherised, and during the whole of a long operation, I raise the cap of the valve A very slightly, so as to allow a small portion of each expiration to escape. Then at each inspiration the patient draws in at B an equivalent amount of fresh air. Thus a small amount of the ætherised air in the residual bag is exchanged at each respiration for a corresponding amount of external air freshly ætherised. This amount, which as a rule need not exceed one sixth or one fifth of each respiration, is easily regulated by raising or depressing the cap of the valve A.

This apparatus may be described as a chamber containing an extension of the residual air of the lungs with *a regulated and limited* supply of æther and fresh air.

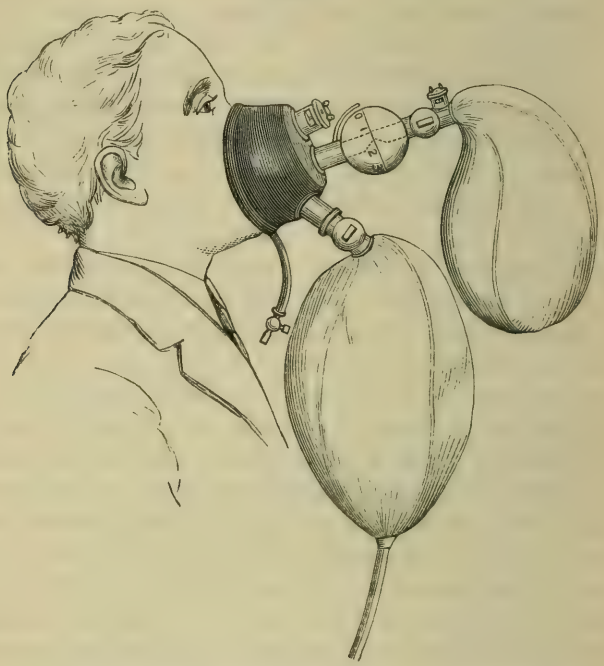
II.—An Apparatus for Prolonging the Anæsthesia of Nitrous Oxide Gas.

This instrument is especially useful for short operations performed in the surgeon's consulting room, for which the anæsthesia of nitrous oxide gas alone gives insufficient time; for instance, the extraction of several teeth, the operation for squint, the opening of abscesses, passive movement of stiff joints, or so-called "bone-setting," the removal of nails, &c.

It will be seen from the following diagram that the face-piece

is in every way similar to the one I use for my æther inhaler, described in Part 1 of this paper.

Fig. 4.



To the *lower mount* is attached an india-rubber bag, communicating with the supply of nitrous oxide gas, and between this bag and the face-piece there is an *inspiratory* valve.

To the *upper mount* an *expiratory* valve is fixed with a metal cap and switch exactly identical with the one already described.

To the remaining mount a miniature Clover's æther reservoir is attached, with the residual bag and inlet valve, but without the water jacket; and this omission has the object of diminishing the weight.

The reservoir is made to hold half a fluid ounce. I put into it that quantity of æther or one drachm of either of the following: —(1) Dichloride of ethidene, (2) bichloride of methylene, or (3) Regnaud's chloroform mixture (which consists of four parts of chloroform to *one* of methylic alcohol), and I have also used a few times chloroform and eau de Cologne (equal parts) with good results.

I prefer ethidene; but for the sake of economy I have employed Regnaud's anæsthetic mixture for hospital dental patients (200 times) and with very satisfactory results.

Having charged the reservoir, I empty the residual bag and turn off the stop-cock leading to it; with the indicator at o, I apply the face-piece and let the patient inhale nitrous oxide alone, whilst the expirations are disposed of through the expiratory valve.

After four or five deep respirations, or if the breathing is shallow, after more than double that number, I open the way to the residual bag and check the action of the expiratory valve by turning the switch upon it.

The patient then expires through the reservoir into the bag beyond, from which he breathes the gas over and over again. I meanwhile move the indicator very gradually towards 1.

If there is æther in the reservoir, I proceed with the indicator as far as 1, *i.e.* with a quarter of the gas respired, passing over the liquid æther.

If the reservoir contains either of the other anæsthetic agents mentioned I revolve the indicator scarcely half way towards 1, *at the same time* watching the pulse, respiration, and pupil.

I have very seldom noticed any indication for stopping the administration until the breathing has become stertorous. At this point, if the face-piece be removed, the operator can generally depend on two minutes of complete anæsthesia.

The return to consciousness being much more gradual than when gas alone is used, the face-piece may be reapplied and further time obtained for the operation.

This may be done even in the case of a dental operation provided there be not much bleeding.

But it is not suitable for operations lasting more than five minutes. For these and longer cases, I find it convenient to commence with this apparatus, then proceeding with my modification of Clover's portable inhaler, this being much less cumbersome than Clover's gas and æther apparatus.

I know that many will wonder at my venturing to give a chloroform mixture in an inhaler from which air is excluded, especially as I have no means of knowing the percentage of anæsthetic vapour respired.

My answer is, that I *do* know that a drachm of the mixture generally suffices for seven or eight dental patients taken one after the other, and that allowing for the evaporation of an equal amount, both during the operation and while preparing for it, there is a very small proportion left for each single case.

Moreover, its administration is effected so very gradually that *sudden* cardiac failure is extremely unlikely to occur.

In five minutes from the commencement of the operation, the patient can generally leave the chair, and shortly after is able to walk home. The result of my experience is that I have only noted one instance of vomiting out of 200 cases.

The face-pieces were made for me by Messrs. G. Barth & Co., Poland Street, while Messrs. Mayer and Meltzer are the manufacturers of Clover's æther reservoir. Both firms supply the entire apparatus.

FOUR CASES

OF

SYMMETRICAL DEVELOPMENT OF FAT AT THE BACK OF THE NECK.

By Sir WILLIAM MAC CORMAC, F.R.C.S.,
SURGEON TO THE HOSPITAL.

The following series of four cases of symmetrical development of fat at the back of the neck appears to possess some interest.

In the first place, the appearance of each case closely resembles that of the other, and in the next, diffuse lipoma, of which these cases are examples, is comparatively rare.

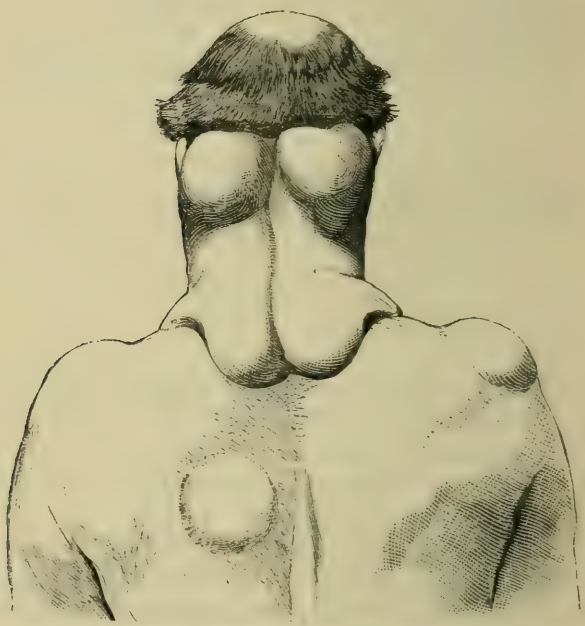
Mr. Morrant Baker has published in the 'Pathological Transactions,' vol. xxx, the notes of an instance of soft symmetrical tumours in the neck, whose general appearance and characters must have been very similar to those presented by my cases. Mr. Baker regarded the swellings as lymphadenomatous. They had only existed for a year. Mr. Hutchinson presented, last session, to the Pathological Society a patient who had a quite similar quadrilobed growth at the back of the neck, but no record of it appears in the 'Transactions.' He regarded the tumours as unquestionably fatty, and, from Mr. Baker's description, I should be inclined to believe that those in his patient were also lipomatous.

Case 1.—William G—, æt. 42, butler, of Tooting, was admitted to hospital on January 28th, 1884, with a large lipoma at the back of the neck. (Figs. 1 and 2.)

The patient first noticed a tumour on the left side of the neck sixteen years before, that on the right side commenced six years ago. The tumours have since gradually increased in size.

On admission there was found to be an oblong swelling situated at the back of the neck, consisting of four very distinct

Fig. 1.



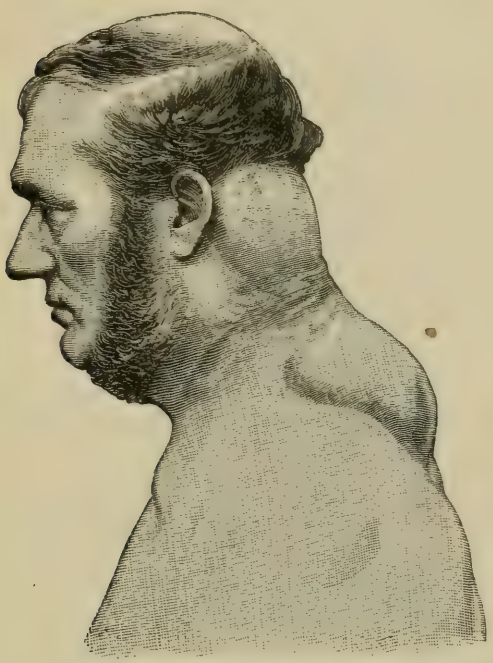
View from behind of the symmetrical fatty tumours on W. G—'s neck, taken from a photograph.

parts, extending from the superior curved lines of the occipital bone above, to the upper borders of the scapulæ below. Laterally, it extends forwards as far as either ear above and to the anterior border of the trapezius muscle below. It is divided into four somewhat equal parts by a crucial depression; one division of this is central and vertical, and corresponds to the spinous

processes. The other is broad, transverse, and corresponds to the middle of the neck. The two upper masses are each as big as an orange and very firmly attached to the subjacent structures. The lower portions are less uniform in shape, there is no defined border separating them below from the subcutaneous tissue of the back, but in the erect posture they project or slightly overhang the surface of the back.

The tumour at the lower part has a semifluid consistence, but

Fig. 2.



Side-view of the tumours, also from a photograph. The lipomatous swellings beneath the chin and in the episternal notch are likewise visible.

above it appears to be bound down by tense fascia and is of a more solid character.

The skin is everywhere freely moveable over the tumour; and no lobulation of its surface can be made out.

On the top of the right shoulder and in the middle of the

back are a couple of fatty tumours of the ordinary description. There are also diffuse lipomatous masses beneath the chin, in the sternal notch, and over both parotids.

The patient complains that the deformity is so great that he can obtain no situation, and is therefore deprived of the means of earning his livelihood.

He urgently demanded relief, and an operation was therefore deemed justifiable.

February 2nd.—The patient having been placed under the influence of ether a vertical incision was made through the skin in the median line, the wound occupying the middle two thirds of the tumour; from the centre of the incision two lateral ones were made curving upwards towards the back part of each ear. After a very troublesome dissection—for the tumours were nowhere encapsulated—the two upper divisions were removed. On the attempt being now made to remove the lower portions of the mass it was found impossible to dissect them out without making the already large wound very much larger and consuming a long time in doing.

The mass appeared to consist simply of diffuse subcutaneous fat. A large V-shaped slice was, however, removed from the centre with the result of materially diminishing the bulk.

The excision of the upper portions accomplished the main object of the operation by removing the chief disfigurement to the man's appearance.

The wound, as already mentioned, was very extensive. The flaps of skin were brought together with silk sutures, and large drainage-tubes inserted into the ends of the incisions. There was a considerable amount of bleeding which proved troublesome to arrest.

The weight of the portions of tumour removed was 1 lb. 3 oz. As regards the upper part it consisted of fat of firm consistence, while the lower resembled ordinary subcutaneous adipose tissue.

The wound was dressed with pine-wood bags, the whole operation being conducted on antiseptic principles.

February 3rd.—Re-dressed with pine-wood bags under the spray. Wound looking very well. Temp. 100·2°.

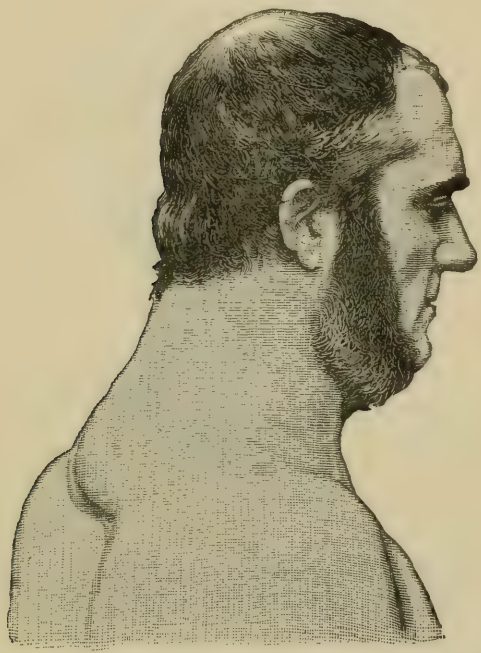
5th.—Re-dressed with pine-wood bags. Not much discharge. Temp. 98·2°.

7th.—Re-dressed with pine-wood bags, all tubes and sutures being taken out. Very little discharge. Temp. 98·6°.

14th.—Dressed with boracic acid lotion. Wound quite healed except two small places at lower part of the median incision where a drainage-tube had been left.

The patient quitted the hospital on the 25th of February with the wound soundly healed (fig. 3) and very grateful for what had been done for him.

Fig. 3.



Taken from a photograph showing the amount of improvement after operation to be considerable.

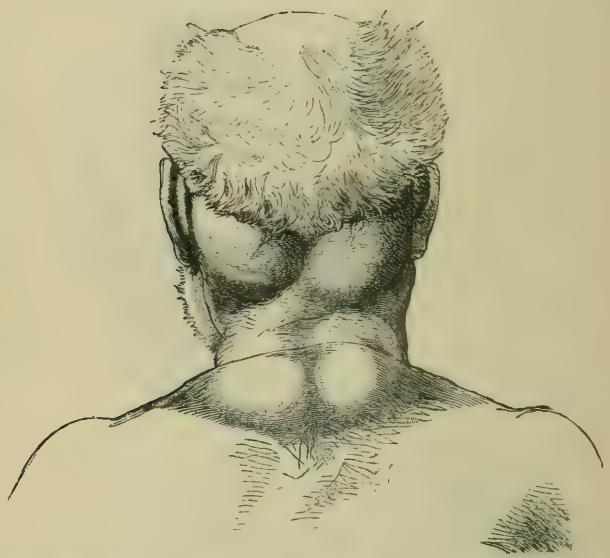
Figs. 1 and 2 are taken from photographs. They accurately represent the appearances the patient presented before the operation, viewed from the side and from behind.

In Fig. 3, taken also from a photograph, the result of the operation is well seen.

Case 2.—Mr. T. E. W—, æt. 62, consulted me June 4th, 1884, for a condition resembling that of the preceding patient. He had noticed the swelling at the back of his neck only for five or six years.

The tumour, which occupies the nape of the neck, may be said to be quadrilobed. The upper two lobes are very distinctly separated by a broad transverse furrow from the lower two. There is also a median vertical furrow or division. The

Fig. 4.



T. E. W—, after a photograph. The fig. illustrates the fairly symmetrical arrangement of the tumours on the back of the neck and shoulders.

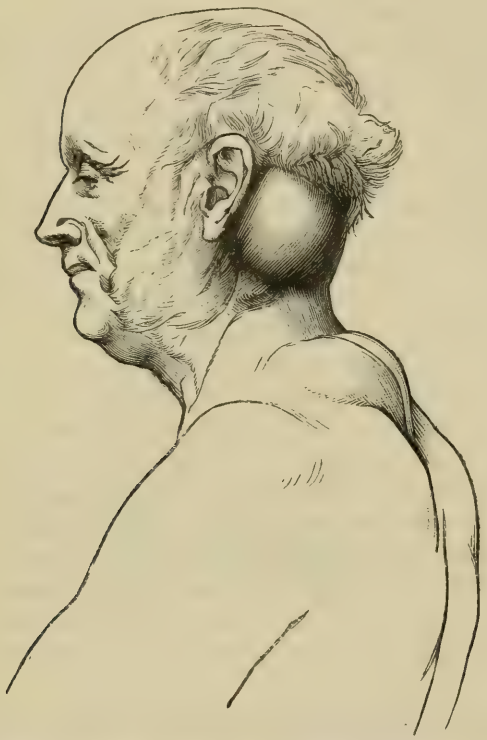
upper pair are each about the size of a small orange, and they extend from the median line to the mastoid processes. Superiorly their margin is sharply defined in the position of the superior curved lines on the occipital bone.

The lower portions are symmetrically placed in regard to the median line and fill up the space between the nape and the angles of the scapula.

The skin is quite moveable over the tumours.

On the right shoulder there is a lipoma of the ordinary type, circumscribed, moveable, and adherent to the skin. And on the forearm are two other small fatty lumps. As the swelling caused little or no inconvenience to the patient, and he was not solicitous about his appearance, I advised that no operation

Fig. 5.



T. E. W—. Side-view of the tumours, taken from a photograph.

should be performed. I can entertain no doubt that these tumours are precisely similar in character to those in the first case. Figs. 4 and 5, which have been copied from photographs, give accurate posterior and lateral views of the tumours.

Case 3.—Mr. Clutton, in 'St. Thomas's Hospital Reports,' vol. xi, has published particulars of a similar case, and through his courtesy I am able to give an illustration of it. (Fig. 6.)

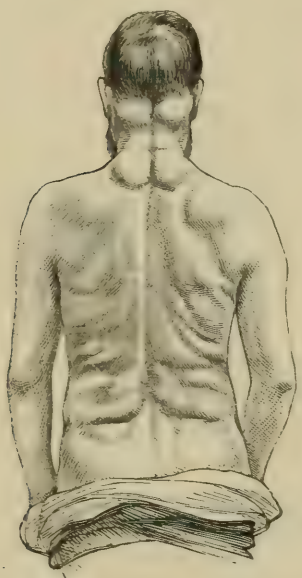
His description given in the following words might apply with but trifling modifications to any of the other cases:

Wm. S—, æt. 44, waiter, had noticed lumps behind his head for about five weeks before he came to the out-patient room of St. Thomas's Hospital. He thought that they had been increasing slightly since first noticed. He did not know that he had any others. On examination we found that he had a most remarkable development of fatty tumours, all placed with most accurate regard for symmetry on both sides of the median line of the body. At the back of his head, occupying nearly the whole of the occipital region, were two large fatty tumours, one on each side of the ligamentum nuchæ, stretching upwards on the scalp as far as the superior curved lines of the occipital bone, and forwards as far as the attachment of the sterno-mastoid muscle to the mastoid process. Equal in size, symmetrical in position, similar in all their characters to one another, they presented a quaint appearance. A little lower down but quite separate from the above were two other swellings, one on each side of the spinous process of the seventh cervical vertebra. These were quite distinct from one another, and placed in identically the same position on each side of the spine. These four tumours, with the median and transverse grooves separating them from one another, together formed a complete likeness of the corpora quadrigemina. Beneath the jaw on each side were other similar growths, forming an almost continuous collar of fat round the neck, but each development of fat was distinctly a growth which could be separated from the surrounding tissues, and presumably, therefore, provided with a distinct capsule.

Other fatty tumours were scattered over the back, occupying pretty nearly the same positions on each side of the body, but not quite so symmetrical as the above; they varied in size from an orange to a small nut. In the lumbar region there was one large one on each side. On the abdomen he had also a curious symmetrical arrangement of similar growths. Immediately below the umbilicus, on each side of the median line, were two rather prominent fatty tumours, soft, and rather more diffuse than is ordinarily the case, but yet sufficiently isolated to make one feel sure that a capsule would be found if the growth were removed. Above the umbilicus were two

other growths, similarly situated, but not quite so distinctly separable from the surrounding tissues as the others, forming as it were, a transition between the ordinary constitutional development of fat and a fatty tumour. At each flexure of the elbow was a small lobulated growth, but, with this exception, no growths were to be discovered on the extremities. The

Fig. 6.



Wm. S—. Quadrilobed fatty tumour of the nape.

patient came under Mr. Croft's care in the hospital, and had both occipital tumours removed. They proved to be ordinary lipomata.

Case 4.—Mr. W. Anderson has given me brief notes of one case of sub-occipital fatty tumours under his care in a somewhat early stage.

The tumours are not very large. The accompanying sketch, Fig. 7, drawn by Mr. Anderson, illustrates the appearances they presented.

The subject is a man, æt. 60, and the duration of the disease was three years. The growths are described as being of very

firm consistency, perfectly circumscribed, and quite unconnected with the skin. In this case the inferior development of fat is wanting. There is a small lipoma over the upper border of the right scapula which presents the usual characters of fatty tumours.

These tumours appear to differ in several respects from ordinary lipomata. They are not limited by any distinct capsule and their development seems to a large extent determined by the fascial arrangement of the region in which they grow.

Being subfascial the skin over them is freely moveable and not intimately connected as in the common form of lipoma.

The growth in these cases appears to develop and spread in the deep fascial plane of connective tissue investing the trapezius muscles. This layer is attached above to the superior curved line of the occipital bone, below to the clavicle, acromion process, and spine of the scapula. It is continuous with the cervical fascia in front and adheres to the ligamentum nuchæ and dorsal spines in the median line. These connections will serve to explain the abrupt limitation of the tumour at the occiput and bones of the shoulder-girdle. The lateral limits in the neck appear to be reached where the deep cervical fascia changes its character and splits so as to enclose the sterno-mastoid muscles. The vertical median furrow is produced by the union of the implicated fascial plane with the deep mesial structures, and the transverse sulcus is probably due to the flexion and extension movements of the head and neck. The growth in the downward direction in the first case presented was probably still in progress at the time of operation, and is so still in the second. Had it remained unchecked it might have extended over the lower part of the trapezius.

Multiple lipomata appear to present a strong tendency to symmetrical arrangement. The variety I have described seems to arise in adult life, and in the whole of this series the male subject was alone concerned.

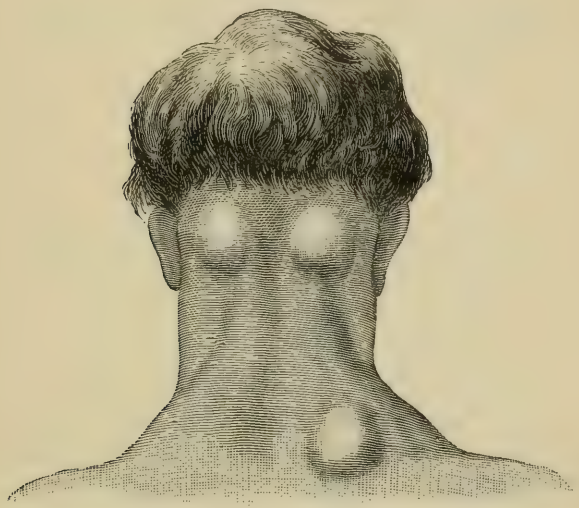
In association with the symmetrically ordered tumours on the neck several fatty tumours on other parts of the body were found showing no such arrangement, except in Mr. Clutton's case, and apparently of the ordinary encapsulated kind. If an operation be performed upon one of these subfascial lipomata it will probably be found attended with considerable difficulty.

The mass has in fact to be cut out with the knife. It cannot be shelled out as there is no distinct capsule, and the bleeding is considerable, conditions the converse of those which obtain in an ordinary lipoma.

In the case of W. G— the removal of the tumours was very tedious, the hæmorrhage copious, and the wound extensive.

This was, I believe, the first case in which I employed the sublimate wood-wool dressing, consisting of powdered pine wood impregnated with ½ per cent. of corrosive sublimate and

Fig. 7.



Suboccipital symmetrical lipoma.

enclosed in a gauze bag, the gauze being also prepared by immersion in a solution of corrosive sublimate.

During the nine months which have since elapsed I have adopted a similar form of dressing with almost uniform success for many different varieties of operation. It is very simple, convenient, and most efficient. The wood-wool is capable of absorbing twelve times its weight of fluid, and the sublimate admixture ensures its antiseptic properties. Prepared peat may be substituted for the wood-wool and has the great advantage of cheapness to recommend it. Ordinary antiseptic precautions were otherwise observed.

REPORT

OF THE

DEPARTMENT FOR DISEASES OF THE SKIN,

1883.

By J. F. PAYNE, M.D.,
ASSISTANT PHYSICIAN TO ST. THOMAS'S HOSPITAL, AND TO THE HOSPITAL FOR DISEASES OF THE SKIN, BLACKFRIARS.

The number of out-patients admitted as new cases (without counting renewals) to the Department of Skin Diseases during 1883 was 743, including 223 of eczema, 98 impetigo contagiosa, 86 tinea, 48 syphilis, 46 scabies, 38 phthiriasis, 36 psoriasis, and 168 other diseases.

Of these I find I have more or less complete records of 681, the difference being accounted for by some papers referring to cases in the latter part of the year not having been yet returned, and by some having been lost, and similar accidents.[1] All these, with few exceptions, were treated as out-patients.

[1] For the information of strangers to our hospital system, it should be stated that these numbers do not represent nearly all the cases of skin disease brought to the hospital. A considerable number are treated among general out-patients, chiefly surgical; and a still larger number of slighter cases, especially eruptions due to pediculi, scabies, and transitory forms of eczema, &c., are dealt with in the Casualty Department. I have to thank the Resident Assistant Physician, Dr. Percy Smith, for his judicious selection of the cases sent to the Skin Department.

The 681 cases may be classified as follows:

	Males.	Females.	Total.
Eczema	90	102	192
Strophulus	2	1	3
Impetigo contagiosa	46	40	86
Erythema	4	3	7
Seborrhœa	1	2	3
Psoriasis	9	27	36
Pemphigus	1	2	3
Hydroa (?)	1	0	1
Lichen planus	0	4	4
Lichen circumscriptus	4	1	5
Herpes	4	5	9
Urticaria	5	2	7
Pruriginous affections	13	11	24
Syphiloderma	16	28	44
Phthiriasis	16	22	38
Scabies	20	26	46
Tinea tonsurans	30	51	81
Tinea circinata	3	3	6
Tinea versicolor	2	2	4
Favus	1	—	1
Sycosis	7	—	7
Alopecia	6	15	21
Acne	13	4	17
Lupus vulgaris	—	5	5
Lupus erythematosus	1	3	4
Scrofuloderma	—	1	1
Morphœa	1	—	1
Macular atrophy	—	1	1
Ichthyosis, including Xeroderma	2	2	4
Purpura	1	1	2
Furuncles	4	1	5
Molluscum contagiosum	1	—	1
Molluscum fibrosum	—	1	1
Warts	1	—	1
Psoriasis linguæ	1	1	2
Varicella	1	—	1
Vaccinal eruption	—	1	1
Bromide eruption	1	—	1
Xanthelasma	1	—	1
Ecthyma cachecticum	2	2	4
Total	311	370	681

Eczema.

Of this disease 192 cases were recorded. From this number are excluded all cases of *Impetigo contagiosa,* of which I shall speak presently. Cases of doubtful diagnosis are arranged under eczema. Out of 192, 90 were males, 102 females. There were 52 children under seven years of age, 33 boys and 29 girls. The ages of patients varied from two months to seventy-four years. The cases presented almost every variety of eczema, but in the space at my command it would be impossible to analyse them properly. There was no case of gout among them. In two cases of children aged four and five months respectively the eruption was said to have followed vaccination.

Strophulus.

This is regarded by Hebra as eczema, and doubtless with reason, since transitions may be met with between this and other forms of eczema. Nevertheless, it is a sufficiently distinct form. An acute eruption of large red or white papules, easily passing into vesicles, on the outer aspect of the forearms and on the face, in the first instance, though spreading to other parts, and occurring in children especially during the first dentition ;—these are the characters of the disease as known to Willan and Bateman. All these characters were well seen in the three cases recorded, occurring in infants of seven, eight, and eleven months respectively.

Impetigo Contagiosa.

This is pre-eminently a London disease, and has hardly yet had justice done to it by continental dermatologists. In Vienna it would seem to be uncommon as Hebra passed it by, and his school have done the same or nearly so. In North Germany, however, it has been described by Dr. Unna, of Hamburg. In Paris, I am told, the disease is now often recognised at the St. Louis Hospital and regarded as clearly contagious, though this was certainly not the case at the time when I attended that hospital in 1865. But even in London there are some physicians of much experience who seem to be sceptical as to the reality of the disease, and it may therefore be worth while briefly to analyse the cases recorded. I have notes of 86 cases which are classified as impetigo contagiosa. From these I separate, for reasons to be given presently, 14 as being of less certain diagnosis, leaving 72 to which no objection can be taken. These numbers do not, however, at all represent the number of such cases brought to the hospital, since many are treated in the surgery as casualties, and many children with this eruption are treated in other departments of the hospital perhaps for other complaints. The disease is an extremely common one in London, and, judging from my statistics of previous years, increasingly so.[1]

[1] The name used by Dr. Liveing and others for this affection—viz. *Porrigo*—does not seem a very happy one, since porrigo has always been used to denote

In a considerable number of these cases there was a history showing or clearly pointing to contagion. There were 23 families, representing 30 patients, in which more than one member of the family was affected; in 16 of these families, two persons, in 4, three, in 1, five, and in another six members of the family suffered; and in another case the statement was that the whole family had had the complaint. In 3 more cases the disease was said by the parents to have been "caught" so that in 33 we may say there was a history of contagion. In the case of one affected family I was told that nearly every house in the street had children with this complaint. The family in question had lived in the street only two months, and within one month 4 children had taken it, beginning with one little boy. Moreover, since the majority of the patients were children attending school, they had abundant opportunities of catching the disease outside their own families.

Age.—27 of the children were under 4 years of age; 38 were from 4 to 12 inclusive, which may be taken as the school ages, including infant schools and kindergartens; 6 from 13 to 17; 1 only adult, a woman, aged 34, who had caught the complaint from a child at the breast. It thus appears that 65 out of 72, or 90 per cent., were under 13.

Another case in an adult, a man, aged 34, is classified under another head, since he was also suffering from another complaint. He contracted a pustular affection of the chin from being shaved, and the suppuration spread to other parts.

Duration.—The duration of the disease before coming under treatment was noted in 41 cases. In 6 it had lasted one week or less, in 20 one to two weeks, in 18 three to six weeks, in 3 as long as two months. The average gives twenty days. Most of the cases were rapidly cured in one to three weeks.

Situation.—In 53 cases, or 73 per cent., the disease was on more than one region of the body. The remaining 20 cases are included in this list in virtue of there being some other purulent inflammation or a distinct history of contagion. In 52 of 72 cases, or 72 per cent., it was on the face, in 35 on the

some affection of the head, and is not more distinctive than impetigo. Whether there is such a disease as simple impetigo, distinct from impetiginous eczema on the one hand, and from impetigo contagiosa on the other, may be regarded as an open question.

hands, in 31 on the scalp or some other part of the head than the face. The numbers for other parts of the body were smaller.

Characters.—The characters of the disease are the same as described by Mr. Hutchinson, Dr. Liveing, and others. Discrete papules or vesicles, which rapidly become pustular and may by confluence form suppurative encrusted patches which heal without leaving a scar. There is no itching as a rule. The neighbouring lymphatic glands generally become enlarged, always when the disease is on the occiput, chin, or lower lip, not obviously so when it is on the nose, upper parts of the cheeks, or forehead. Skin affections of the latter parts appear to have little tendency to affect the glands; which may, perhaps, be partly the reason why rodent ulcer, for instance, affecting those parts does not, according to the testimony of surgeons, implicate the glands.

Treatment.—This always consisted in ordering the removal of crusts by a poultice and the application of white precipitate or diluted nitrate of mercury ointment.

Complications.—There are two points connected with the disease on which I should like to say a word or two, as I think they have not received sufficient attention. (1.) The frequent association with the skin eruption of purulent inflammations of the mucous membranes or of the orifices of the body. (2.) Its frequent origin from some suppurating wound or slight injury to the skin.

(1.) In 12 cases a purulent inflammation of some other part coincided with impetigo. In 7 this inflammation was conjunctivitis, in 2 cases otorrhœa, in 1 purulent vaginitis, in 1 purulent discharge from the nose, in 1 ulcerative stomatitis, while in another case a sister of the patient had ulcers of the mouth.

The conjunctivitis cases were as follows:

1. Annie T—, æt. 1. Had been under the Eye Department for purulent conjunctivitis of fourteen days' standing. For one week had had discrete pustules, with some crusted patches on the skin around the left eye. Thence suppuration had spread or been conveyed to the left ear and the scalp. Within the last four days pustules had appeared on the left hand.

2. Amy T—, æt. 9 months. Eruption had begun on the upper lip, said to have followed a cold. Scattered pustules and papules on the face, and slight inflammation of the conjunctivæ. One pustule had recently appeared on the left wrist.

3. Portia G—, æt. 9, at school. Crusted suppurative patches on the cheeks

and side of mouth. Both conjunctivæ inflamed. One suppurative patch on right hand.

4. Albert E—, æt. 4. Been under the Eye Department with inflamed eyes, and successfully treated. Now had the characteristic spots of impetigo on lips, chin, &c., and also on both hands.

5. Josephine O'H—, æt 6. Conjunctival inflammation of the left eye; the surrounding skin with scattered, crusted patches of suppuration. Another child in the family had the same eruption on the face.

6. E. B—, æt. 4. Conjunctivitis of left eye. Pustules round the eye, and also on left ear. Yellow crusts on back of neck and occiput; one patch near front of head. A patch on right wrist, and the remains of the same on left arm. The same eruption on both legs near the knees.

7. John R—, æt. 4. Left eye suffused, with the eyelids swollen and erythematous. One yellow crusted patch on the scalp, said to have existed fourteen days. In one ear more recent suppuration of seven days' standing. Recent pustules on finger.

In some of these cases it was quite clear that the affection of the eye was the primary one, and that the skin was secondarily affected. In others the order of succession was not apparent, and it is quite possible that the conjunctivitis was set up by the transference of purulent matter to the eye by the child's finger, but there is no objection to supposing that the same poison produced in each of the two tissues its corresponding inflammation.

The two cases accompanied by otorrhœa were these:

1. Joseph W—, æt. 3. Otorrhœa of the left ear. Thick crusts on the back of the auricle, and also on the upper part of the back of the neck. Abraded surfaces on the face and chin.

2. Charles B—, æt. 12 (school). Otorrhœa of the left ear, and pustules on the skin surrounding it, for fourteen days. Pustules on one finger for about a week.

In these cases it seems impossible to avoid the conclusion that some contagious property in the pus discharged from the ear caused first a pustular eruption in the surrounding parts, and then in other regions of the skin to which the pus was conveyed by the finger or otherwise. They were not cases of simple eczema. Otorrhœa, as is well known, often sets up eczema of the outer ear by direct irritation, but the significant fact here is the production of a suppurative inflammation in distant and discontinuous parts of the body.

The one case of this year complicated with vaginitis was that of a little girl.

Mary C—, æt. 1 year 8 months, had pediculi in the head, and connected with or arising from this state of things impetiginous crusts, which had existed for fourteen days. She had also pustules on the wrists. Around the vulva was a crop of pustules somewhat resembling herpes, and a purulent discharge from the vagina. The vulvar eruption and discharge had existed only two or three days. In this case I suppose that pus was conveyed from the head or the hands to the genitals, and set up inflammation there.

In this year (1884) I have met with a similar case. Two girls, sisters, came with impetiginous crusts on the scalp and elsewhere, and one of them, aged 18, had, since the head was affected, acquired a "discharge," which turned out to be purulent vaginitis. The patient was a very quiet respectable girl, and all the information obtained from questioning her mother, as well as the result of examination, negatived the supposition of any venereal infection.

It appears to me that these facts may furnish an explanation of the sudden breaking out of such discharges in children, which often causes so much surprise and alarm to parents and nurses. When the contagious impetigo is present in the house or neighbourhood, the pus might obviously be conveyed by accidental means to a child's genitals. The medico-legal importance of these cases is well known.

Stomatitis and Coryza combined with Impetigo.

The following cases show the connection of these two affections with impetigo contagiosa:

Jessie H—, æt. 13, and Mary H—, æt. 1½, sisters. The elder had an impetiginous pustular eruption around the mouth and on one cheek, also the remains of an inflammation on the mucous surface of the mouth, where the eruption is said to have begun with sore places. The younger had impetiginous crusts on the mouth and nose, and a purulent discharge from the nose, but also pustules and larger patches on the hands. I have not the dates of these eruptions, but nothing is more natural than that the elder sister, kissing the baby, should give or receive the contagion (probably the former), and the extension to the little child's hands shows the character of the disease.

In another case, a child, F. R—, æt. 1 year 8 months, had well-marked impetigo contagiosa on face only for one week. An elder sister, æt. 7, a delicate girl, also brought to the hospital, had an ulcerative stomatitis of three weeks' standing, chiefly affecting the gums of the right side, with swelling of the cheek. There was no eruption on the skin. In this case there was every opportunity for contagion to have taken place.

It has often been recognised that ulcerative stomatitis is accompanied by pustular eruption on the lips, and I have seen

such cases brought to other departments of the hospital. I have also seen from time to time the same affection complicated with pustules on the hands, though I cannot give the cases here. In fact, I remember at one time giving a series of cases in children the name of "Hand-and-Mouth Disease." The ulcerative stomatitis of children is frequently epidemic, and I have seen it apparently contagious in families.[1] Its origin is generally quite unexplained. If due to a specific poison these facts become quite intelligible. I am disposed to believe that this disease and impetigo contagiosa may be caused by the same poison acting on different tissues, or at least that some cases of stomatitis are thus produced. An ulcer in the mouth corresponds to a pustule or excoriated patch on the skin, the formation of crusts within the mouth being obviously impossible, while all inflammations within the mouth tend to ulceration.

The second important fact connected with impetigo contagiosa is its origin from "festering" wounds. This must doubtless have been often observed, but is not always recognised by writers on skin diseases. The following cases illustrate the fact:

1. Arthur U—, æt. 4, an ill-nourished child, fell down and grazed his knee six weeks ago. The wound "festered" and impetiginous crusts formed around it. This eruption spread to both legs and the face with the same characters. He also had two or three sore fingers. Two other children in the same family subsequently took the impetigo.

2. Ernest F—, æt. 5 months, seen March 29th, 1884, had been vaccinated near the beginning of January (twelve weeks before). One vaccine vesicle still covered with a scab, the others healed. Impetiginous crusts on the forehead, the cheeks, and behind the ear. The history was that the vaccination spots had "festered" and produced an eruption on the arm, which afterwards spread to the head and face.

That an inflamed vaccine vesicle may be the starting-point of impetigo has been shown by Mr. Hutchinson, but it cannot be very commonly so, as I have had few cases; but it is surprising the vaccine vesicle does not more often become affected with the contagion.

3. Robert L—, æt. 5, cut his left hand seven weeks ago, the cut "festered," and suppuration spread to face, where are crusted patches, which have existed for three weeks.

[1] Notes of cases at Hospital for Sick Children in 1869.

4. Jeannette A—, æt. 2. Grazed knee; the wound became surrounded by pustules, which spread to one hand and the body.

5. Frank J—, æt. 6. In having his hair cut was wounded with scissors, and shortly after suppurative patches appeared, forming crusts; the affection spread to the neck and the right hand. (No pediculi.) Now of three weeks' standing.

6. Mary A—, æt. 17. Four weeks ago had her ears pierced for earrings, the punctures became inflamed. Both ears are covered with impetiginous patches, and the same has spread to the face for one fortnight.

7. Sidney D—, æt. 3. A suppurating sore on arm from scratch of cat, also crusts on the face.

8. Charles P—, æt. 4. Encrusted impetiginous patches, attributed to a blow. His brother, two years old, has caught it.

9. Alfred F—, æt. 9. Sore on front of right leg produced by a tight boot. It suppurated, and pustules formed around it, which afterwards spread to the left leg also.

In all the above cases the history is the same,—of a superficial wound becoming affected with unhealthy suppuration or festering; of the suppurative process extending in the first place to adjacent skin, then to distant parts of the body, and in some instances to other persons. Most of the children thus affected are no doubt cachectic, and the festering of slight wounds is nothing remarkable, but there must be some property in the pus to make it contagious. Whether it acquires this contagious property from some change in itself or from some poison from without, is not proved, but the latter supposition seems the most probable.

Doubtful cases.—The fourteen cases classed as doubtful were probably most of them impetigo contagiosa. Four cases have been separated only because the suppuration was confined to one region of the body. For instance, a girl, aged 12, had an eruption of scattered pustules on the face, of the kind which used to be called impetigo sparsa. It was in all probability the same disease, but as not showing any definite evidence of transfer to another part, I do not include it in the statistics. Five cases were of impetigo confined to the scalp, and though it is quite possible for the disease now spoken of to be thus limited, I omit them in order to be on the safe side. Four cases were complicated with eczema, and though eczema may arise out of the contagious impetigo, or *vice versâ*, I omit them, as it is possible eczema may have been the basis.

One very curious case was that of a man, aged 23, a blacksmith, of robust make, but intemperate, who had two open

suppurating inguinal glands, from which impetiginous patches had spread over the thighs, to the hands and other parts of the body. On careful examination, no trace or history could be found of any venereal affection, though the man was evidently cachectic. The glands had been inflamed six weeks; the skin affection was more recent. Under local and general treatment the impetigo was rapidly cured and the inguinal abscesses improved. It was evidently a case of contagious suppuration.

Conclusion.—If I rightly interpret the above cases, there would appear to be a special morbid agent which is capable of setting up unhealthy suppuration in superficial wounds; of causing, or at least imparting a special character to certain superficial inflammations of the eye, the ear, the nose, the mouth, and the vagina, and also of producing a pustular eruption even on unbroken skin. I believe also that the same agent may modify other skin diseases, for instance, scabies. In severe cases of pustular scabies, we find pustules on parts, such as the face and head, where the acarus never comes; and these pustules are not simple excoriations produced by scratching; the pus appears to be locally contagious, independent of the parasite. The same thing may be seen in the excoriations produced in other itching eruptions, such as that of pediculi vestimentorum or the so-called infantile prurigo or lichen urticatus. Simple eczema may be modified in the same way, becoming impetiginous by special contagion; though, of course, I do not say that eczema may not become purulent from other causes.

It would appear that this morbid poison finds a specially favorable soil in the tissues of cachectic persons, especially children. Hence in most of the cases of this disease there is marked anæmia and cachexia. But constitutional predisposition cannot be the root of the matter, since we can easily cure the disease by local means without improving the general health.

It is doubtless more difficult to communicate the disease to healthy persons, and hence the failure of inoculative experiments, which I have tried, as I believe have others also; and it may perhaps be open to question whether the poison is ever developed to such intensity as to become actively contagious, except in cachectic persons. Dirty and neglected wounds are more likely to become affected; but dirt and poverty alone

cannot explain the origin of the disease, since it does break out sometimes, though not commonly, among the well fed and well cared for, as in boarding schools for children of the upper classes.[1] Moreover, it would seem that this poison is specially prevalent at certain times and places, so as to constitute an epidemic.

From these facts it would be natural to suppose that the morbid poison is some micro-organism; and some have supposed that it was some fungus allied to that of ringworm, &c. But the absence of any fungus of that class (hyphomycetæ) is easily established. It is more difficult to solve the question with regard to bacteria and micrococci. If pus be examined nothing definite can be seen, but in the serous fluid of recent vesicles I have more than once seen micrococci, singly and in chains. The latter form might seem almost characteristic, but I have seen chains of micrococci undistinguishable from these by their form, in vesicles of herpes iris, so that whether there is any form really characteristic of either of these diseases can only be shown by further investigation. The question might be raised whether the micrococcus differs from that of pyæmia, or, again, from that alleged to be the cause of gonorrhœa, but it is evident that the inflammations produced by this poison, for instance, in the eye (an organ which all these diseases may affect) are much less severe than in the case of either of the others.[2]

Erythema.

The four male patients were aged 11, 14, 15, and 41 respectively, the three female 7, 9, and 20. It is very difficult to classify the different eruptions which have to be called erythema, so that I can only enumerate them.

Case 1.—Boy, æt. 11, who had previously suffered from chorea. Acute erythema of both hands, combined with swelling and tenderness of the joints of the fingers, came out suddenly

[1] In 1881 I saw two boys (sons of a gentleman), from a boarding school at the seaside, with this complaint, which they had communicated to their mother's hands. It was said that more than half the school suffered from it.

[2] Dr. Radcliffe Crocker has described similar chains of micrococci ('Lancet,' May, 1881).

with febrile symptoms. No purpura or ecchymosis. This, I suppose, must be called rheumatic erythema.

Case 2.—Boy, æt. 15, well-marked and typical *erythema nodosum* of both lower legs. No rheumatism or history of it; not the slightest pain or tenderness in the joints.

Case 3.—Boy, æt. 14, remarkable acute eruption of areolar erythematous spots all over body, which disappeared without undergoing further development in fourteen days. No other illness. No explanation whatever of the eruption.

Case 4.—Man, æt. 41. Well-marked case of erythema multiforme. Highly vascular red patches with central papules tending to become vesicles. Disappeared in a week. A clear history of ague. I suppose that some of the American dermatologists would attribute the eruption to malaria.

Case 5.—Girl, æt. 7. An erythematous eruption combined with papules covering nearly the whole of the body. Came out with marked febrile symptoms; had lasted one week; quite distinct from any exanthematic fever.

Case 6.—Girl. æt. 19. *Erythema circinatum.* A ringed eruption, of five days' duration, on backs of hands, forearms, and sides of neck; quite symmetrical. Fair health, but some symptoms of chorea. In one week there was no great change. Whether this eruption is the same thing as herpes iris, which I have put under another head, I must for the present leave undetermined.

Case 7.—Girl, æt. 20, in business. *Congestive cyanotic erythema.* There was general venous congestion of the feet and hands, which were of a purplish colour and always cold. The fingers were swollen, especially towards the tips, the nails thickened, and a congested, almost eczematous condition of the beds of the nails. On the backs of the hands, raised red erythematous patches. The little finger of left hand in a condition more resembling chronic eczema, being scaly, but not exuding. The right leg below the knee covered with raised purple patches of erythema (not ecchymotic), and also very numerous, closely-set purplish punctiform spots. The right foot like the hands, but more swollen. An open sore on the dorsum of foot at base of middle toe, looking something like a broken chilblain. The left leg had an erythematous eruption like that of the right below the knee and near the ankle. The

left foot was unaffected. The eruption did not itch, but was painful. The whole had come on in one month, except the little finger of left hand, which appeared to be in a condition of chronic eczema of much longer duration. The patient was delicate, but had no serious illness. Amenorrhœa of three months' standing. Good appetite and plenty of food. She had always suffered a little from cold hands and feet, but protested she had never had chilblains either recently or as a child. There was no family history pointing to consumption or any constitutional disease. The patient had evidently had slight chronic scaly eczema of the fingers before this attack came on, but there was no other skin disease.

This curious case is something like erythema multiforme of Hebra, but differs from it in the marked venous congestion and cyanotic condition of the extremities. Similar cases have, I believe, been called "chilblain-erythema." I have seen several in which stagnation of blood in the extremities was accompanied by the same purple mottling of the legs and sometimes the arms. In one case the nose was also affected, resembling one form of acne rosacea. It appears to depend upon obstruction to the circulation in the capillaries or smaller arteries, not on weakness of the heart. Whether the obstruction is caused by vaso-motor disturbance or some change in the walls of the capillaries may be uncertain; I incline to the latter hypothesis, but both are conjectural.

Psoriasis.

In all 36 cases were noted, 9 males, 27 females. These cases may be considered with reference to the question of causation, duration, complication, situation, and treatment.

Causation.—Gout, rheumatism, and the scrofulous diathesis, are often regarded as among the causes of psoriasis. It is interesting therefore to remark that in no one of these cases had the patient suffered from gout. In one case, a girl, the father was said to have gout. In one case, a boy, aged 8, the mother had rheumatism, and her father was said to have suffered from the same disease. A woman, aged 55, had well-marked and typical rheumatoid arthritis. There was no history of tubercular or scrofulous disease except in the case

of a girl, aged 15, who had hæmoptysis and definite physical signs of phthisis in one lung. The psoriasis was of the form called *guttata*. The mother was probably phthisical, but no other member of the family. I can hardly think that any of these diseases have much to do with the production of psoriasis. Gout, for instance, is not now a common disease in any country except England, and even here it can scarcely be called common among the lower classes. Sir Gilbert Blane, formerly physician to St. Thomas's Hospital, affirms that among some thousands of hospital patients he never saw a case of gout. In Germany, in Scotland, and in some other European countries, at least, it is almost unknown. Psoriasis, on the other hand, is a world-wide disease. In all the European hospitals and in America it is constantly observed. Now, it is hardly logical to assume that what occurs rarely is the cause of what occurs commonly; the effect cannot be much more frequent than the cause. If this be true, the term "gouty psoriasis" would seem to be misleading, and the cases (which doubtless occur from time to time) of gout and psoriasis occurring in the same person must be regarded as coincidences. Almost the same is true of tubercular disease; an affection so common must sometimes coincide with a comparatively common skin disease, like psoriasis. Whether when present it modifies the form or the progress of the latter affection I leave an open question.

Lactation has often been regarded as an exciting cause of psoriasis in predisposed individuals. In my cases this year I find four cases of psoriasis in women suckling. One was a woman, aged 25, with her first baby, but she had had the skin disease also three years previously when unmarried. Another patient, aged 27, had been affected with psoriasis more or less for fourteen years; the present attack came out when she had been suckling three months. In another, aged 36, it was the first attack of psoriasis, which had lasted one year, coming out during pregnancy, but distinctly worse during lactation. The fourth case, a woman aged 27, was not suckling at the time, but there was a distinct history of an attack of psoriasis during lactation four years previously. The influence of suckling in determining an attack seems therefore well marked.

Perhaps it is hardly the right way of putting it to call

heredity a *cause* of psoriasis, but it not unfrequently recurs in families. Family history was always investigated in these cases, but I find only twenty-four out of thirty-six in which the information is sufficiently explicit to give a positive result. Out of these twenty-four there was in six a family history of the disease. In one case two antecedent generations, mother and grandfather, had suffered. In another the mother and three mother's sisters; in two others the mother; in one an uncle; in another a brother. This would give a proportion of one out of four in which heredity could be traced.

It will appear from the above-mentioned facts that most psoriasis patients have no other illness, and are in in fact in good health; a considerable proportion are decidedly robust. Syphilis, inherited or acquired, in no case appeared as a cause; the scaly affection of the skin produced by syphilis, and sometimes called syphilitic lepra, is classified elsewhere. There is, of course, nothing to prevent psoriasis patients from acquiring syphilis, and they occasionally do so; and, on the other hand, a patient who is, so to speak, fated to have psoriasis may have had syphilis, but the eruptions are distinct.

One *complication* of psoriasis is worth mentioning. A man, aged 55, with typical psoriasis of the legs and arms of twenty years' duration, applied for treatment on account of a moist eczema behind the ears, which had lasted only three months. I regard this as noteworthy, because the coincidence of the two diseases is very uncommon. The skin of a psoriasis patient seems little liable to take on eczema, since even irritating local treatment very rarely produces it. In this case no cause of the eczema was traced. It readily yielded to treatment.

Age and duration.—The age of the patients on admission was in the nine males from 8 to 55, giving an average of 36; in the twenty-seven females from 5 to 55, giving an average of 23·75. The difference is explained by the disproportion of young cases in the two sexes. Of the males only one was under 10 years of age, two under 21; of the females six out of twenty-seven were under 10 years, fourteen out of twenty-seven under 21 years. These proportions are borne out by the experience of previous years, in which I have found a considerable number of little girls with psoriasis, but very few little boys.

The age on admission is, however, unimportant compared with the age of the first attack or commencement of the disease, though this date is not always easy to fix. Taking only cases where the history was tolerably complete, I find that the first attack occurred in males from 8 years old to 55 (one case only), and in females from 5 to 54 (one case only near this age), the average age of commencement in males being 29·1 years, in females 18·3. Taking the same cases the average duration in males had been 8·2 years, in females 4·6 years. These figures of course do not at all represent the real duration of the disease, which is in most cases lifelong when once established, that is, the patients are at least always liable to recurrence. The reason that patients at an advanced age rarely apply for treatment is probably that the eruption in many cases gives them very little trouble, and that in others they despair of recovery.

Similar considerations explain partly the disproportion of the sexes among adults applying for treatment, but not in the case of children, since mothers will be hardly less anxious about the skins of their young boys than of their girls.

Distribution of Psoriasis on the Body.—In one case the disease might fairly be called *universal.*

This is so uncommon that a short account may be worth giving.

Joseph D—, 48, stationer, a robust-looking man, is covered from head to foot with thick imbricated silvery scales of psoriasis on a red basis, the scales being thicker in the typical situation on elbows and knees. Except a small part of the face, and parts of the backs of the hands, not a square inch of the skin is exempt. The tongue with white patches, not thickly covered. Has good health and never any serious illness. Has had the psoriasis for twenty years off and on. Attended this hospital last year for the same, and after three months' treatment was quite free from it. [But I think the disease was not so universal then.] Present attack began about four weeks ago with a red eruption "like erysipelas," and then spread all over the body. No family history of gout or rheumatism or of skin disease, except that his father is reported to have been "scorbutic." Has four brothers and sisters with healthy skin. One brother, or perhaps two, died, as patient thinks, of consump-

tion (?). The only question about this case was whether it should be called pityriasis rubra or psoriasis. But the thickness of the scaly masses, their predominance in certain regions, and their precise resemblance at those parts to ordinary psoriasis, showed it to be the latter disease, and indeed, when half cured the case was exactly an ordinary case of this disease. With arsenic and tar treatment he rapidly improved, but left before he was completely freed from the eruption. In three and a half months "the greater part of skin perfectly well, but typical patches on knees and elbows remain, and palms not well."

In six other cases it was very general, that is widely distributed on the limbs and other parts of the body.

In nineteen cases the distribution was what may be called *typical, i.e.* on the extensor sides of the limbs, especially on the elbows and knees.

In three other cases the typical distribution was combined with occurrence on some other part of the body.

In two cases it was in scattered spots (ps. guttata). In one of these on the limbs only.

In one case it was only on the face and head.

In two cases (beside the *universal* case) it occurred on the palms of the hands, which is rare.

One case was that of a man, aged 55, in robust health, entirely without any symptom or history of syphilis. The eruption was on forearm, fingers, nails, and palms of both hands. It was of six weeks' standing. He rapidly got well after arsenic was administered.

The other case, a woman aged 55, with characteristic patches on the legs as well as on the palms. She also had chronic rheumatic arthritis. This case was more obstinate.

Treatment.—The three chief factors in the treatment of psoriasis are—(1) Arsenic internally; (2) washing with alkalies or soft soap; (3) application of aromatics or stimulants, especially tar and chrysophanic acid. Generally two of these three means were employed, but not always the same pair.

Pemphigus.

The three cases were, a woman, aged 60, a little girl, aged 6, and a little boy.

Case 1.—Mrs. T—, æt. 60, sent to the hospital by Mr. R. W. Thomas, of Peckham, an anæmic person in feeble health. Had symmetrical bullæ, without suppuration, on neck, also on arms and thighs, and both ankles. Had suffered altogether two years. No special illness, but had lately recovered from an attack of pleurisy, during which the eruption disappeared. Patient attributed the attack to anxiety and trouble. After six weeks' treatment (Liq. Arsen. ♏ v, t. d.) the bullæ disappeared, but a few papules remained. In a month from this time, the arsenical treatment being still continued, there was a relapse; there were large bullæ on the legs, the patient also suffering from insomnia and want of appetite, without fever. After five weeks' treatment with increased doses, this attack passed off, ending with small bullæ on the fingers. The patient found herself so nearly well that she ceased to attend. Her own statement was that the relapses occurred about once a month, but were distinctly less severe under treatment. This case shows the periodic character of the disease which I pointed out in the cases reported last year.

Case 2.—Florence W—, æt. 6, disease of one year's standing. Large bullæ, which suppurate, on head, neck, thighs, and abdomen. The present attack came out in four days. Temperature 101° F. A thin, delicate girl, without any family history of any constitutional disease. She was admitted into the hospital, where she took arsenic and after some weeks left quite well. She returned as out-patient with a slight relapse, which soon yielded to treatment, and she was apparently quite cured, at least for the time.

Case 3.—Benjamin H—, æt. 5, apparently in good health. Had suffered for two years off and on. The present attack about three months. He only attended once.

Hydroa?

This was a peculiar case to which I hardly know what other name to give. A man, aged 39, in good health, had an acute eruption in the forearms and hands, lower legs and feet, of large and small bullæ (or vesicles), with papules, accompanied by slight itching. The eruption ended with complete exfoliation of the

skin of the hands and feet. There was no continuous discharge as in eczema. By some it might have been regarded as a mixed or irregular form of pemphigus with vesicles and papules in addition to bullæ. It bore also some resemblance to the so-called cheiro-pompholyx, but was more extensive. It still more resembled the cases I have seen of hydroa (or herpes) gestationis in pregnant women, and as it agrees very nearly with "bullous hydroa" as defined by Bazin, I prefer to give it that name. The man recovered in a few weeks under arsenical treatment. According to his own account he had been subject to attacks of the complaint since twelve years old, and two brothers had the same.

Lichen Planus.

The ages of the four patients were 46, 49, 62, and 70 respectively. The disease is no doubt commoner in women than in men, but the fact that this year all the cases happen to be of the female sex, would convey an exaggerated notion of the disproportion. Since 70 is rather an unusual age for the first occurrence of lichen planus, I should say that the eruption in this case was perfectly characteristic and even typical.

Lichen Circumscriptus (vel Circinatus).

The four cases of men were 22, 24, 28, 29 years old, the female case 33.

This curious affection is not very uncommon in London, though not recognised by the Vienna school. Several other cases have come under my observation from other departments of the hospital, and two in medical students. Besides these I have seen a good many cases at the Blackfriars Hospital for Skin Diseases, and some in private practice. The characters are sufficiently given in Dr. Liveing's book on the 'Diagnosis of Skin Diseases.' It is not uncommonly supposed to be syphilitic, especially if, as has happened in one or two of my cases, the patient has at any time suffered from syphilis. But it has far closer resemblance to a parasitic disease, and I have

generally, as a precaution, made a microscopic examination of the scales, but always without finding any fungus.

There seems to be an undoubted connection of the disease with the habit of wearing warm woollen garments next the skin. In many cases the same garment has been worn day and night, and Dr. Herbert Stowers tells me that the experience at the Blackfriars Hospital is that this is the invariable antecedent. But the rule is certainly not so absolute, though woollen garments generally, and flannel more especially, have a remarkable tendency to foster the disease.

With regard to treatment, rubbing the skin with soap and water, followed by inunction of some ointment containing carbolic acid, has cured nearly every case in one or two weeks, without any internal medicine. In one or two obstinate, and perhaps exceptional cases, recourse has been had to arsenic internally as recommended by Dr. Liveing, and these have been also cured.[1]

Herpes.

The nine cases comprise:

Herpes zoster . . .	2
Herpes iris (vel circinatus) .	6
Herpes labialis . . .	1

The cases of herpes zoster were both little girls, aged 9. Many cases of this complaint are treated in other departments, since they are either under treatment for some other disease, or else, as acute cases, are attended to in the surgery.

Two cases occurred here in patients with other skin diseases, viz. erythema and psoriasis, and are classified with them.

Herpes iris in a well-marked form occurred in two men, aged 24 and 16 respectively. Two similar cases in girls, aged 18 and 16. The two other cases occurred in children, one aged 5 years, the other 9 months; they were slighter, and approached to erythema circinatum.

[1] I do not know who first noticed the connection of this disease with woollen clothing. It is not pointed out by any text-book writer, so far as I know. Some have supposed a rheumatic diathesis to be concerned.

The baby of nine months had also a circinate patch on the tongue. The eruption was not parasitic, and there was not the least suspicion of syphilis.

Pruriginous Affections.

Under this head are placed:

1. Fourteen cases of pruritus from internal or unexplained causes, excluding those produced by the irritation of pediculi.

2. Ten cases of infantile prurigo, or lichen urticatus.

1. Among the cases of simple pruritus were four cases in aged people (seventy-two to eighty-three years old) of so-called prurigo senilis. It is quite possible that there may have been pediculi in these cases, though I could not find any traces of them. In the remainder this cause was improbable, though in the case of out-patients it is difficult to establish a negative.

Pruritus in Tabes Dorsalis.

A man, æt. 52, came complaining of itching in the skin. There was no appearance of pediculi, nor enlarged papillæ, nor any sign of permanent prurigo, the skin being quite soft. A very slight, dry, scaly eruption on the fronts of the legs. The itching had troubled him many years. He had drunk freely, and suffered from syphilis thirty years before. Though he complained of no other special symptoms, he was found on examination to have well-marked signs of tabes dorsalis, viz. ataxic gait, absence of knee-jerk, contracted pupils, neuralgic pains, &c. After taking large doses of potassium iodide he became much stronger, and quite lost the itching of the skin. A weak carbolic acid lotion was also used. After about three months he ceased to attend. In this case there was no visible cause for the intense pruritus, which may, therefore, possibly, like other affections of the peripheral nerves, have been a part of the general nervous disease, tabes dorsalis.

2. *Infantile prurigo.*—This disease, also known as lichen urticatus, or urticaria papulosa, is certainly a well-marked one among London children of the poorer classes, and is quite distinct from the prurigo of Hebra; nor did any of these cases exhibit any tendency to pass into that affection. Hebra's prurigo occurs in London, but very rarely, and no case came to St. Thomas's Hospital in this year.

The disease occurred in four boys, from two to twelve years of age, and six girls, from one to three years and a half. With-

out entering into the characters of the eruption, as described by most English dermatologists, I only wish to say a word about treatment. After removing as far as possible all internal and external causes of irritation, and applying soothing lotions to the skin, it is of the highest importance to soothe the nervous system and procure sleep. With this object I give small doses of potassium bromide or chloral at night. Opium is too dangerous—at least for children who are not under continuous observation. All the cases where this treatment was persevered in were much improved, and some were completely cured.

Syphiloderma.

The cases of syphilis comprised ten men, twenty-four women, and ten infants. The comparatively small number of men is certainly no evidence that the disease is less common in the male sex, but is due to the fact that most cases of men are treated in the surgical department, as they avow their complaint, while women are admitted merely as cases of skin-disease.

The ten cases of men may be classified as comparatively early or secondary, of which there were seven; later, or tertiary, of which there were three. Under secondary are included those cases, whatever their duration, where the eruption was erythematous, macular, papular, scaly, or tubercular only, without ulceration or formation of crusts. As tertiary are classified generally, the cases in which there were ulcers and crusts. Primary syphilis is not treated in this department.

Early cases.

Case 1.—Æt. 23. Primary disease a year and a half before. Eruption chiefly papular.

Case 2.—Æt. 26. Primary three years before. Mucous patches on glans. Papular eruption on limbs.

Case 3.—Æt. 31. Primary ten years before. Scaly circinate eruption on face, forehead, and arms.

Case 4.—Æt. 32. Primary a year and a half before. Groups of rather hard papules on arms, legs, and other parts, including palms of hands.

In one group of cases *Alopecia* was the marked feature.

Case 5.—Æt. 19. Primary disease nine months before. Hair falling off rapidly without scurf or other affection of scalp.

Case 6.—Æt. 24. Primary several years before. Hair falling off, with scurf and scattered tubercles on head.

Case 7.—Æt. 36. Primary eight years before. Hair falling; also a scaly condition of scalp and scattered papules.

Late or Tertiary.

Case 8.—Æt. 53. Primary at least twenty years before. Ulcerated and crusted patches leaving deep scars on the face. He had attended several times before with a similar eruption, which was rapidly cured by large doses of iodide of potassium with perchloride of mercury.

Case 9.—Æt. 60. Primary thirty years ago. Tubercles with deep suppuration.

Case 10.—Æt. 49. In its chronology was tertiary, being twenty-five years after the primary disease, but the only lesion was a rimous scaly condition of the palm of the left hand, the so-called *psoriasis palmaris,* which had lasted continuously twelve years. He had attended two years previously and improved much under treatment, but left off attending as soon as he was well enough to work. He was treated with iodoform ointment (gr. xxx to 1 oz.) as well as the internal remedies; and in five weeks the hand was nearly well.

Syphilis in Women.

Among the twenty-four cases of women, nineteen were married and five single. The date of the primary disease could not, for obvious reasons, be in most cases determined, but by the presence or absence of ulcerative and destructive changes, ten might be roughly defined as tertiary and fourteen as secondary. It should be stated that in almost all the cases there was some confirmatory evidence for the diagnosis in addition to the character of the eruption.

The following table gives the particulars, first of the severer, then of the slighter cases:

Late or severer cases.

No.	Age.	State.	Situation of eruption.	Character of lesion.	Remarks.
1	52	Married	Forehead, legs, palms	Crusts, scales	—
2	50	„	Neck, forehead, ears	Crusts	—
3	49	„	Head	Tubercles, with deep suppuration	—
4	44	„	Neck and shoulders	Tubercles, crusts, deep scars	—
5	35	„	Leg	Brown scaly patch, scars	—
6	35	„	Face	Crusts and scars	—
7	34	„	„	Scaly and crusted patches	Perforation of tongue.
8	33	„	„	Crusts and scars	Attended 2 years before with same.
9	23	„	„	„	Ulceration of mouth; some affection of eyes.
10	27	„	Face and legs	Ulcerated and crusted patches	—
11	30	Single	Face (nose) and neck	Serpiginous encrusted eruption and scars	—

Early or slighter cases.

12	43	Married	Head and face	Raised, scaly patches	5 miscarriages, then 3 stillborn, and then 1 living child.
13	43	„	Neck	Scaly patches	—
14	42	„	Palm, left hand	Scaly	Rapid recovery with Hg. Cl.
15	40	„	Palms of hands	Tubercular	„
16	27	„	Palm, left hand, and wrist (7 years)	Scaly, with desquamation	Infant with snuffles.
17	25	„	Trunk and limbs	Diffused, scaly	—
18	22	„	Palms of hands	Scaly and rimous (4 months)	Rapid recovery with Hg. Cl.
19	19	„	Arms, neck, &c.	Erythematous and scaly	Recent; rapid recovery.
20	35	„	Head (ears)	—	Tongue ulcerated.
21	30	Single	Arms and trunk	Scaly	—
22	20	„	Face, palms and soles, &c.	Scaly, no ulceration	Primary disease 6 mos.; tongue sore.
23	19	„	Neck	Scaly patches	Sore throat.
24	18	„	Scattered on various parts	Erythematous and scaly	Infant severely affected.

In the above list are five cases in which the palms of hands were affected, and in one (22) the soles of the feet also. In all these the affection had more or less the character of what is called psoriasis palmaris, though more like palmar eczema than like psoriasis. It is between eczema and syphilis that the diagnosis usually lies; true psoriasis of the palms being, as

observed in speaking of psoriasis, a great rarity. The diagnosis in these cases, if it had been doubtful, would have been confirmed by the results of treatment, the affection disappearing rapidly in three of them (14, 15, 18) with internal administration of Hg. Cl. In the severe case (22) the eruption on palms of hands persisted when other parts of the skin recovered; but yielded to the ointment of iodoform already mentioned. The remaining case (16) did not attend long enough for any effect to be produced.

Cases of Syphilis in Infants.

No.	Sex and age.	Symptoms.	Treatment.	Result.	History and remarks.
1	1 mo. M.	Bullæ on thigh, &c.; erythema of nates	Hyd. cum creta	Ceased to attend	No family history. Syphilitic pemphigus.
2	1⅛ mo. F.	Ulcers on nates; scaly patches on limbs; snuffles; cachexia	Ung. hydr., followed by hyd. cum creta	Skin clear in 1 month, all symptoms gone in 2 months	First living child; one miscarriage. Mother: ulcerated sore throat one year after marriage.
3	2½ mo. M.	Scaly eruption of head and face; erythema of nates, &c.; snuffles	Ung. hyd.	Recovered in 6 weeks	Some eczema followed, which was easily cured. No history obtained.
4	3 mo. M.	Scaly patches on head and face; erythema of nates; snuffles; cachexia; always crying	Ung. hyd., followed by hyd. cum creta	Eruption gone in 1 month	A little consecutive eczema. First child. Mother had sore throat and skin eruption after marriage and before child's birth.
5	3 mo. M.	Scaly eruption over head and neck; palms and soles sore; constantly crying; fits	Ung. hyd.	Ceased to attend	Mother also under treatment for eruption (Case 24 of women). First child.
6	4 mo. F.	Erythema of nates and pudenda; marked snuffles since 10 days old	Hyd. cum creta	Improved	Seventh child. Another had had similar symptoms. No history of disease in mother.
7	4 mo. F.	Erythema of nates, &c., with ulcers; snuffles	Ung. hydr.	Improved in 3 weeks; ceased to attend	Another child of same family treated here with same symptoms 3 years ago, and completely recovered. Mother had had eruption on skin and falling of hair.
8	6 mo. M.	Bullæ on head; scaly patches on scrotum and other parts; marked snuffles	„	Nearly well in 6 weeks	Sixth child. 5 others all died; one at birth, the others at from 3 to 5 mos. All had snuffles. Mother had previously four miscarriages, and "rash," with bad sore throat.
9	10 mo. M.	Scaly, irregular patches on arms, legs, and body	„	Apparently cured in 6 weeks	No history recorded (part of notes lost).

This child (Case 9) was brought three months afterwards with a severe relapse, the same eruption having recurred after an attack of measles. He was extremely cachectic, had signs of rickets, and a very large head. Under treatment with cod-liver oil and mercurial inunctions he rapidly recovered and grew fat. But the cachexia returned in spite of all treatment; the head enlarged, and there were evident symptoms of chronic hydrocephalus. The child ceased to attend, and probably died.

Case 10.—Female, æt. 2½ years. An extremely cachectic child, with flat, pale-red, scaly patches on nates, pudenda, thighs, &c. No moisture and no irritation. Rapidly improved in condition, and lost the eruption under small doses of hyd. cum creta. No family history. A doubtful case, but probably syphilitic.

Case 11.—This was a remarkable case, in which the diagnosis of syphilis was not complete. A child, 3 months old, suffering from extreme marasmus, with an erythematous and scaly eruption on the nates, &c. The child was almost always crying (sometimes for four hours together), and was sometimes "convulsed." There had been diarrhœa, but this had already ceased. The child was fed by the bottle, and did not vomit. There was no cough or sign of organic disease, and on examination nothing was found to account for the extreme emaciation and marasmus. The remarkable fact was that the eight former children of the same parents had died of atrophy, with similar symptoms, at about the same age. Thinking it possible that, though the eruption was too slight to be distinctive, it might be a case of syphilis, I thought it right to try mercurial treatment; but the child was only brought once, and eight days afterwards died (as I was told) with fits. There was, as usual in the case of out-patients, no post-mortem, and the case must remain one of unexplained marasmus, possibly syphilitic.

It is noticeable that in five cases, or about one half of the number, the mothers of the affected infants had suffered from an eruption. This is an unusually high proportion.

Phthiriasis.

Of the thirty-eight patients treated for lice, ten were infested with *pediculi vestimentorum*, viz. seven men and three women; no children.

Twenty-eight were cases of *pediculi capitis;* four only were persons over fourteen years of age, viz. three women and one youth. The remainder were children, viz. eight boys and sixteen girls.

Some of the latter class might have swelled the lists of impetigo contagiosa, as the suppuration was conveyed from the head to other parts of the body.

These numbers are very far indeed from representing the number of patients attending the hospital who are infested with vermin.

Scabies.

Of the forty-six cases, twenty-nine were children, viz. seventeen girls and twelve boys. Adults were mostly treated with some form or another of ointment containing sulphur; children in many cases and some adults with storax, in the form of one part of storax combined with two of olive oil, to be rubbed in over the whole body.

Tinea Tonsurans.

These cases were of course nearly all children from two to thirteen years of age. One case was a girl of sixteen. The disease is interesting chiefly from the point of view of treatment; and this must be, in out-patient practice, very unsatisfactory. The physician can neither apply the remedies himself or ensure their being properly applied. Hence some of the cases are extremely tedious. Without going into details of treatment, I will only refer to two comparatively new remedies which have been used, namely, *oleate of mercury* and *boracic acid.* The former has been used in many inveterate cases, and though it has not brought the disease to complete extinction, it has greatly accelerated the cure. I find that continuous application, even of the weaker forms of oleate, soon produces so much soreness that it has to be discontinued, and it may produce salivation. Notwithstanding these drawbacks, the skin when the oleate is discontinued is so much improved as to be rapidly cured by milder remedies. This was exemplified in a group of cases coming from an orphanage in the South of London.

Three little girls, æt. 7, 8, and 11, had suffered from ringworm, the two younger for three years, the eldest for five years, during the whole of which time they had been kept separate (under treatment) from the rest of the children. They were treated with 5 per cent. oleate till great soreness and some suppuration was produced; it was then discontinued, but all of them had sore gums. A borax lotion was then used (gr. xv ad ℥j), and then the following ointment, which has a traditional reputation at St. Thomas's:

℞ Ung. Hyd. Nitratis, ʒj;
Creasote, ♏x;
Adipis, ʒvij. M. Ft. Ung.

In the most obstinate case an ointment of carbolic acid and vaseline (gr. xxx

ad ʒj) was also used. In three months one of the three years' cases was pronounced cured, the other not long after, but the five years' case was more obstinate, and required more than four months. I have since heard that the cures were complete, there was no relapse, and the children were allowed to mingle with their companions.

Another case treated with oleate of mercury was the following :

A boy, æt. 13, brought up from Sussex with ringworm which he had had for four or five years. He was treated with 10 per cent. oleate till soreness was produced, and then with the mixed ointment mentioned above. In five weeks the head appeared healthy, and I could not find any broken hairs. The parents were strongly urged to bring him again if there were the least signs of the disease, and, I believe, would have done so, as they were extremely anxious about it, so that it was probably cured.

Another remedy which I have used a great deal lately is an ointment of boracic acid, prepared according to Mr. Martindale's formula (boracic acid 3 parts, vaseline 10 parts, paraffin 5 parts). It acts remarkably well in recent and slight cases, and produces perhaps more obvious immediate improvement, and brings the skin into a healthy clean condition sooner than any other application. I have only once seen it produce suppuration. Over chronic and inveterate cases, however, it seems to have much less power ; and in such cases is less useful than stronger remedies.

Chrysophanic acid has disappointed me in ringworm ; and carbolic acid seems much less efficacious than might be expected from its antiseptic and germicide properties.

Tinea Versicolor.

Many parasiticide applications are capable of curing this disease ; but I find one of the best is finely-powdered borax. It should be rubbed into the skin when just washed with soap and water. This is a more agreeable way of applying the remedy than in a greasy ointment or chilling lotion.

Favus.

The one case was that of a boy, Ernest R—, æt. 10, from Great Bookham, Surrey, who had had it for one year. The cups and crusts were perfectly characteristic. The story was that

numerous cases had occurred in the village, but Mr. Arthur Stedman, the leading practitioner there, was kind enough to inform me, in answer to my inquiries, that he knew of no other case in the district, though there had been cases of common ringworm which had perhaps given rise to some confusion. It was proposed to admit the boy as an in-patient, but he did not accept the invitation. Favus is now very rare in England, and in London is probably all but extinct; the few cases which occur in our hospitals from time to time coming mostly from the country. The last case which occurred at St. Thomas's was under my care in September, 1879.

Sycosis.

In two of these cases the fungus (*Trichophyton tonsurans*) was discovered with the microscope. One of them was an obvious case of tinea in which there were distinct rings as well as pustules. The other had precisely the appearance of what is regarded as "ordinary sycosis." The first microscopical examination revealed nothing, but on more careful examination of specimens taken home mycelium and spores were discovered. It has happened to me in several instances to be unsuccessful in finding the fungus till the second or third examination. I cannot help thinking, therefore, that some cases are described as *acne mentagra* or ordinary sycosis which are really parasitic sycosis or tinea. In some instances the external characters of a parasitic disease are obvious enough; in others I must confess the parasitic disease and the simple disease (if there be really a simple sycosis) appear to me quite indistinguishable by the naked eye.

Alopecia.

In one case there was total alopecia, twenty were alopecia areata.

The six male cases of al. areata were from eight to twenty-seven years old, the average age being seventeen.

The fourteen female cases were from seven to twenty-nine, the average age being thirteen and a half.

In most of the cases, especially those occurring in children,

the hair was examined microscopically, but in no case was any parasitic mould-fungus discovered.

In one instance there was a family group of three cases, sisters. The youngest, aged 11, was a patient this year, and one of the elder sisters had been previously.

The cure is slow, though spontaneous recovery often takes place. The usual treatment, by stimulating lotions and occasional blisters, seemed on the whole most successful, but in some cases I found benefit by rubbing in sulphur ointment (B. P.), as suggested to me by my friend, Dr. Thin. Two of the cases discharged cured were thus treated, but the cure required several months.

The one case of universal alopecia was in a married woman, aged 30, whose hair had fallen off completely and rapidly two years before. In about ten days she had lost all the hair on every region of the body. As usual in these "universal" cases there was no recovery, and treatment had no effect.[1]

Acne.

The sixteen cases included twelve males, four females:

Acne vulgaris, eight cases: six males, two females.

Acne rosacea, seven cases: five males, two females.

Acne varioliformis, one man.

The ages of the cases of acne vulgaris were mostly from fourteen to twenty-six, one case only as old as thirty-five. The average was twenty-one years.

The ages in acne rosacea were thirty-three to forty-five, the average thirty-nine. These figures represent the ages at which these affections respectively occur most frequently.

The cases of acne rosacea were all of the slighter or non-hypertrophic form.

Acne varioliformis.—This rare and curious affection was seen in a man, Frederick H. K—, æt. 29, musician. An eruption of the characteristic flat, umbilicated pustules, leaving a scar, chiefly on the forehead, penetrating a little way into the hairy scalp, and also at the nape of the neck. No sign and no history of syphilis, health apparently quite good, and habits

[1] Cases of syphilitic alopecia are mentioned under syphilis.

temperate. The affection had existed some months, and been fruitlessly treated with local remedies. Under the administration of arsenic (Liq. Arsenicalis ɱvj, t. d.) it rapidly disappeared, and the patient was discharged cured, to his great satisfaction, as the disfigurement produced by the eruption had interfered with his professional engagements.[1]

Lupus Vulgaris.

The cases of lupus in this department are mostly slight. Severe cases are sent to the surgical departments for operation. On the other hand, superficial cases have been sometimes transferred by me to my surgical colleagues. The five cases were all females.

Case 1.—Milly L—, æt. 19, with signs of pulmonary phthisis and of a phthisical family. Has been under treatment, with intermissions, for two years. Suffered from lupus from a child. There were originally two small patches of lupus, one on the outer aspect of the upper arm, the other on the face. The former was destroyed without much difficulty in two or three cauterizations with acid nitrate of mercury. The latter, in the middle of the cheek, was about three quarters by half an inch. It was several times treated with caustics; first with nitrate of mercury, then with the arsenical paste. In May, 1882, it was reduced to a fibrous scar much smaller than the original patch; by systematic painting with contractile collodion it was made much smaller. As the scar did not disappear, and was painful, it was thoroughly cauterised with nitrate of silver, and after some vicissitudes not worth relating the cure appeared in 1883 to be complete, and the patient ceased attending.

This case was kindly referred to me by my colleague Mr. Mackellar. It is hardly necessary to mention that the patient was taking at the same time cod-liver oil and other remedies for phthisis.

Case 2.—Augusta W—, æt. 20. No actual disease of the lungs, but father had died of consumption. Extensive lupus of the face, which had existed since childhood. Had been treated at three hospitals; twice by very thorough "scraping," once by actual cautery, and also by other remedies. The disease was much benefited, but not cured. The patient only attended once, being recommended to return to the hospital at which she was last treated.

Case 3.—Elizabeth M—, æt. 21. Came up from South Wales to be treated. A well-nourished girl of lymphatic temperament. No lung disease, and no definite history of any constitutional weakness in the family. Severe and somewhat extensive lupus with ulceration and crusts. There was considerable destruction of one ala nasi, and the whole nose showed the characteristic de-

[1] This case was shown to the Dermatological Society, Jan. 6th, 1884.

formity of lupus, beside considerable tubercular patches spreading on to both cheeks. The destruction was so great that one physician of much experience in skin diseases expressed the opinion that it would be better to do nothing. In August, 1883, she was admitted as an in-patient under Mr. Pitts, who performed a remarkably successful scraping operation. In October she attended again as out-patient, when the greater part of the disease appeared cured; the nose was restored almost to its original symmetry. There were, however, a good many outlying superficial tubercles, which were destroyed by nitrate of mercury and nitrate of silver. The patient returned to the country, but presented herself again this year (1884) much improved. She was again referred to Mr. Pitts, whose treatment was followed up by successive partial cauterisations, and by the application of an ointment of iodoform and vaseline, which was very useful in the more superficial portions. The disease was definitely arrested, and almost if not quite cured when the patient ceased to attend.

The conclusion to be drawn, I think, from this and from several similar cases which I have seen is that Volkmann's "scraping" process is by far the most effective in severe cases of lupus, but that in order to be permanently successful it should be followed up by sedulous after-treatment.

Case 4 (sent to the hospital by Mr. Cameron, of Harlesden).—Mary H—, æt. 45, married. Had suffered from lupus of the face since twelve years old. When young was treated with caustics, and the disease was apparently cured, though with a scar. Within the last six months (coincidently with stoppage of the catamenia) the disease has reappeared, and now shows a red tubercular patch on the right cheek without ulceration.

This case was remarkable for the absence of any constitutional predisposition. The patient's mother is living in good health at the age of eighty-five. Her father died at seventy-two. She has ten brothers and sisters, all said to be in good health. She herself has seven healthy children. The patient has never had any definite illness, and states that her health is good, though she is thin and looks older than the age assigned. She did not attend long enough for any opinion to be formed as to the effects of treatment.

[Case 5.—Sarah B—, æt. 64. Symmetrical ulcerating lupus-like patch on the nose, covered with crusts, and one ulcerating patch on the left cheek. This was alleged to have existed only two years. There was no history pointing to the probability of syphilis, but I think it was most probably of syphilitic origin, in fact, a tubercular syphilide. The patient did not attend long enough for the case to be properly studied, and I therefore regard the diagnosis as uncertain.]

Of the four genuine cases there were two with a clear history of tubercular disease in the individual or the family; two in which such a history was absent.

Lupus Erythematosus.

As this name is not always applied quite in the same sense, it is right to say that no cases are here included under this

head which did not present the following characters. A rough, red patch, usually on the face, covered with firm, greasy, yellowish or dark-coloured scales; sometimes with enlargement of the sebaceous follicles, producing an appearance like the "grain" of morocco leather. It always tends to become symmetrical, that is, it does become so if it lasts long enough, though it may and often does begin on one side. It not only spreads continuously from its original seat, but may appear quite *discontinuously*, so that after the nose, for instance, is affected, symmetrical patches may appear at the posterior part of the cheeks, on the ears, or on the backs of the hands. Its onset is usually rapid, so that it may sometimes be called an acute disease, and may become rapidly generalised over large surfaces.

It seems desirable to lay stress on these characters, because I am persuaded that the usage in respect of this name is somewhat different in this country and on the Continent.

In this country the name "erythematous lupus" is often applied to cases resembling common lupus, in which the disease is either very superficial or is complicated with a good deal of erythema. In Germany and in France I believe, from my own experience and from reading, that the name is used in the more limited sense indicated above. I do not undertake to say that one of these uses of the name is necessarily right and the other wrong. Many excellent authorities hold that the two diseases are essentially the same, and that forms exist which make a complete transition from one type to the other. This is far from being proved, but in the meantime I am sure that confusion has arisen from the fact that different writers have had different types of disease in their minds when writing their descriptions.

It is unfortunate that we cannot have names for skin diseases which do not pretend to be descriptive, and which do not involve a theory. If Cazenave was, as is generally asserted, the first accurately to describe this disease, it would be better to call it "Cazenave's disease," rather than to use a name which implies any view as to its nature or affinities. Such names are what Bentham called "question-begging epithets."

It cannot be denied that there are marked differences between these two diseases. Lupus (though it may be multiple) grows

and spreads from the point or points at which it occurs after the manner of a new growth, that is continuously; Cazenave's disease appears, as I have pointed out, discontinuously at isolated spots, more in the manner of psoriasis, or of an exanthematic eruption, though of limited extent. The associated constitutional states are very different. Lupus is in the majority of cases associated with tubercular disease or some disease allied thereto, either in the individual or in the family, so that nearly all authorities have regarded it as an expression of the "scrofulous diathesis." Cazenave's disease, on the other hand, is very rarely associated with any such diathesis. Sir Erasmus Wilson says "it is not necessarily due to a strumous source," though he calls lupus broadly "a result of the strumous diathesis." In fact, the association of this disease with any so-called scrofulous disease is not too common to be a mere coincidence. Furthermore lupus begins nearly always in early life, Cazenave's disease almost invariably in adult life. The only point really common to the two diseases is a certain amount of destruction of tissue, but this in the latter disease is not deeper than is seen, for instance, sometimes in acne, and constantly in variola. If I may express an opinion, not mine alone, I think the affinity of this disease with lupus, though asserted by eminent authorities, remains to be proved.[1] The older names, erythema centrifugum (Biett), or even seborrhœa congestiva (adopted and then rejected by Hebra), though doubtless objectionable, appear to me to be nearer the mark.

I here give only a short summary of the cases.

Case 1.—Elizabeth T—, æt. 32, married. Red, rough, slightly scaly patch, nearly symmetrical, on nose and upper lip. At tip of nose covered with yellowish, closely adherent thin scales, under which a granular morocco-like surface. Also a symmetrically situated erythematous flush on both sides of the neck. Patient is very subject to "flushes" of face and neck. Eruption has lasted four years. Suffers from constipation and indigestion, with flushing of face after meals. Catamenia irregular and attended with much pain. Slight cough for a few weeks, which soon ceased with treatment; no physical signs in lungs. Never any serious illness, but always weak. Parents healthy and long-lived; no family history of consumption or similar disease.

Case 2.—Frances M—, æt. 34, married. On left side and bridge of nose; in one part is a patch covered with dirty-coloured scales, under which a honeycombed red surface; the rest granular and morocco-like. Began on the left side; now

[1] This conclusion agrees with the general result of the discussion at the Medical Congress, London, 1881 ('Trans.,' vol. iii, p. 162).

spreading over to the right. A patch of the same character on the vertex of the head in the middle parting. Patient complains of indigestion and has always been delicate; was at one time supposed to have consumption, and has spat blood; has no cough now and believes herself to be cured. The eruption began two or three years ago during her last pregnancy, when she suffered also from neuralgia, chiefly of left side. Has five healthy children, the youngest two years old.

Case 3.—Ellen G—, æt. 28, married. First attended in 1882 and is still under treatment, though often absent for long intervals. The characteristic eruption on nose, cheeks, forehead, and small patches in both ears quite symmetrical. There was originally a patch on sternum, now cured. Patient is in fair health and never had any serious illness, but complains of pain and nausea after food. Has been married four years; has had the eruption about three years. No lung affection or family history of such disease.

Case 4.—Henry E—, 40, coachman. A patch the size of a sixpence on tip of nose; another smaller on the right *ala nasi;* both with a granular morocco-like appearance and covered with a few scales. Patient says there is, from time to time, a red patch on the left ala, but nothing can be seen now. *Also two small, symmetrically situated patches with same characters on outer surface of both ears.* The eruption has lasted three months. For the last three or four months patient has suffered from flushing and so-called "inflammation" of the face, especially after meals, but has otherwise no special symptoms of dyspepsia, except a white tongue. He is a fairly robust man and says he has very good health. Used at one time to drink spirits to excess, but has given up this habit for some years. No family history of consumption or gout or rheumatism. His father died of apoplexy. The history of this case, and especially its rapid extension to two isolated patches on the ears, are entirely different from the history of a case of lupus.

In the four cases, the ages at which the disease commenced were 28, 31, 25, 40, the disease having lasted four years to three months when the patients came under observation.

It will be seen that in all these cases, with the exception of one doubtful history of phthisis, there was nothing to show any connection with tubercular or scrofulous disease. The only antecedent condition common to all of them was hyperæmia of the face, produced in these cases by gastric or uterine derangements. From the histories of numerous other cases, I am disposed to believe that previous hyperæmia is a factor common to all cases of this disease and the only factor common to all. If this be so, the antecedents are much the same as those of acne rosacea; though why this persistent or periodical hyperæmia should in some cases lead to acne rosacea, in others to lupus erythematosus, is at present quite unexplained.

Scrofuloderma.

This name is given to a case of suppurating scrofulous glands in the neck of a little girl, aged 6, where there was infiltration of the surrounding skin. It presented no unusual features.

Purpura.

The two cases illustrate the great difficulty of classifying cases of this disease.

Case 1.—Lilly T—, æt. 10, an anæmic girl, had purpuric and erythematous patches and spots on both legs. They were not larger than one eighth to a quarter of an inch in diameter, some flat, some papular. At the lower part, round the ankle, they were darker coloured. Some were brown. The eruption had lasted three weeks. There had been swellings of knees and ankles, which were painful at night. The ankles now tender, but not swollen. Heart-sounds normal. No family history of rheumatism. Parents healthy. Had never had scarlatina or any symptoms pointing to it. At the next visit the urine was examined, and found to contain much albumen. The purpura rapidly passed away, and there was no further swelling of the joints. This case would probably be called "rheumatic," though the evidence of true rheumatism was incomplete; on the other hand, it might be called "renal" purpura.

Case 2.—Wm. W—, æt. 1¾, came with an eruption of punctiform ecchymoses and larger mottled purpuric patches, all bright red, not livid, and slightly raised. The larger patches and most of the eruption on legs; to a less extent on arms and body. There were no other special symptoms. Eruption had lasted five days. At the beginning of it the child had suffered from diarrhœa, the discharges being mucus tinged with blood. He was rather delicate, but in fair health, and had had no special illnesses. What kind of purpura to call this I do not know. The child was brought only once, and probably got well.

Cases of purpura more often appear in other departments of the hospital than in the skin department.

Ichthyosis and Xeroderma.

One case was that of severe general ichthyosis in a girl, aged 16, said to have existed from birth with little variation. Three were cases of the slighter form of ichthyosis, usually called, at least in this country, xeroderma. They were, a boy twelve years old, another five years, and a little girl two and a half years.

Morphœa.

The only case of this was a young man, aged 19, a waiter, in whom it was subsequent to smallpox.

Charles D—, September 12th, 1883. On the left temporal and parietal regions of head, extending as far as the vertex, an oblong patch of white, hard, parchment-like skin, about four inches long by one inch broad, with the characteristic appearance of morphœa. There was baldness over the greater part of the patch, but not all. No pain or only a very slight smarting. The eye was unaffected both externally and functionally, nor was there any affection of any other branch of the fifth cranial nerve. General health of the patient good. No family history of any nervous or constitutional affection. This condition had been coming on about nine months, having begun just after Christmas, 1882. In the early part of December he had had a mild attack of smallpox. The change was said to have begun in a bald patch on the temporal region, but the special characters of the skin, according to the patient's account, were first seen near the vertex. It was difficult, however, quite to understand his account of the history.

Macular Atrophy.

This, the only case which I have seen of this remarkable affection, occurred in a married woman, aged 34, who only attended once.

She had on the arms, neck, and trunk patches of a roughly circular or oval shape, from a quarter to half an inch in diameter, or sometimes more. These patches were whitish and depressed, the skin having the smooth semi-transparent appearance seen in the well-known and common *linear atrophy* of the abdomen and other parts. Some patches were remarkable as being œdematous, so that the skin slightly projected, and looked at first sight like a bulla. This appearance was made more prominent when the surrounding skin was pressed. There was some mottling of the skin of the nape of the neck resembling leucoderma. There was no itching or any subjective sensation in the parts. The patient also had *linear* atrophy of the mammæ, but not from lactation, since she had never been pregnant. The affection had been noticed for four or five years. Patient had been married six years. Never had any children or been pregnant. The catamenia were regular, and the general health perfectly good. She could not remember that she had ever had any illness. Her appearance was healthy, though not very robust. During the past year she had, however, been getting thin, and complained of obscure pains in the back and between the shoulders.

Molluscum Fibrosum.

A remarkable case in a woman, aged 40, who has been under observation for several years.

The tumours are soft, some sessile, some pedunculated, and various in size; the largest the size of a small grape. They are thickly spread over the face, shoulders, and arms, and are increasing in number. After the tumours had existed for some years the patient began to complain of painful lumps in the left axilla, which I must confess I at first took for enlarged glands. But a closer examination (made at the suggestion of my friend Dr. Cavafy) showed that they were really swellings on the axillary nerves or *neuromata*, such as have been described in connection with molluscum fibrosum by von Recklinghausen.

Space will not admit of a fuller description here.

Psoriasis (vel Icthyosis) Linguæ.

The two patients with this affection both came under treatment for some other skin disease.

Case 1.—Ann W—, æt. 24, single. The patient came with an ordinary vesicular eczema of face and hands, of recent date. On examining her tongue, it was found to present thick raised patches of epithelial hypertrophy, of a prevailing yellowish colour, and somewhat abruptly marked off from the red depressed surface. In other parts were less elevated, mottled white patches, and some curved lines with thickened epithelium, sometimes almost resembling a scar; nothing on the inner surface of the mouth. The patient declared that her tongue had been in this condition as long as she could remember, or at least since she was a child. It was sometimes better and sometimes worse, but never free from this appearance. A microscopical examination of scrapings from the tongue showed nothing but ordinary epithelial scales. No explanation could be given of this condition, and there was no evidence of constitutional or hereditary disease.

Case 2.—William S—, æt. 63, clerk. The patient applied for an eruption of lichen circumscriptus, with the characters of the cases recorded under that head. His tongue was found to be uniformly covered with a thick, very white layer of hypertrophied epithelium, presenting precisely the appearance called psoriasis linguæ. This condition had lasted for twenty years. He had had distinct syphilis thirty years ago. He is a moderate beer drinker, but used at one time to take spirits somewhat freely. I have no note as to smoking. He is married and has two healthy children, but several died in infancy.

Dermatitis Artificialis.

A butler, aged 19, who had been much occupied in cleaning silver plate with a plate powder, probably mercurial, had deep

ulcerated sores on the hands, entirely different from any kind of artificial eczema. They soon got well under treatment with diachylon ointment.

Bromide Eruption.

A child seven months old suffered for three months from severe epileptiform fits and other symptoms indicating cerebral disease, for which it was treated with bromide of potassium. A characteristic eruption of raised patches covered with crusts on arms, legs, face, and lower part of back. The patches mostly oval, and on the limbs symmetrical, but not so on the face. The appearances need not be minutely described, since they precisely agreed with those represented in the New Sydenham Society's 'Atlas of Skin Diseases.' The eruption lasted till the child's death (from bronchitis) two months later. The maximum dose of bromide was fifteen grains in the day.

Ecthyma Cachecticum.

The name ecthyma is somewhat vaguely used, but is here intended to express an eruption of suppurating unhealthy sores, sometimes presenting at first the appearance of a bulla, but becoming encrusted, which occur chiefly as the result of some slight mechanical lesion in cachectic persons. They are most common on the legs, but may occur elsewhere. They are often set up by scratching or rubbing, but it would be too much to say that fresh ones do not occur without any injury, when the disease is once set up. The disease then, if it be a distinct disease, is rather defined by the cachectic condition which causes any slight injury to produce an unhealthy sore than by any special character in the original lesion. In half-starved children the skin of the fingers may become detached into a sort of imperfect bullæ, which then pass on into ecthymatous sores. I have seen this condition arise in a miserable pauperised family, and heal spontaneously when the children were better fed. Such cases seldom come to a hospital.

The four cases were two adults (1) a man of 60, who after an attack of erysipelas fell into a state of extreme cachexia and debility so that he could hardly

walk; (2) a woman, aged 54, who, probably from poverty, was in a similar condition. Both rapidly got well with iron internally and simple local treatment.

There were two children, a little girl, aged 4, who had been brought low by an attack of varicella, and a boy, aged 3½, extremely cachectic and anæmic, with signs of rickets. They recovered under similar treatment.

Whatever objections may be made to the term ecthyma, it is difficult to see what other name is applicable to cases like these.

Xanthelasma Multiplex.

Although this remarkable case is shortly referred to in the Medical Registrar's Report, I shall here give an abridged account of the general symptoms.

James K—, æt. 43, labourer. Admitted as out-patient March 13th, 1883, and on the 16th made in-patient under Dr. Stone. He was discharged on May 2nd, and readmitted from Aug. 10th to Oct. 31st under my care as substitute for Dr. Bristowe.

Before admission he complained of pain in the left side and of passing blood from the bowels.

Patient is a man of middle height, of robust make, but poorly nourished, and very pale, as well as jaundiced. His previous history showed nothing remarkable. Twenty-six years before had been laid up with a fever. Three years ago had an accident, being struck in the left side of abdomen, to which he attributed the pain felt there. Had been very intemperate, drinking beer to excess; and his wife stated that he was very excitable, and she thought his mind was disturbed. His family was healthy; both parents alive and well; six brothers and sisters, all healthy. No history of gout, rheumatism, or phthisis.

On examination, the liver was found enlarged, hard, with a smooth edge; felt at least two inches below the ribs. The skin was generally jaundiced, and presented a widely spread eruption of xanthelasma. The characteristic raised yellow patches of xanthelasma were found in the form of linear ridges on both lids of both eyes, especially near the inner canthus, on the sides of the mouth, and behind the ears. In the flexures of both arms were patches of the same shape, and the same in both axillary folds, and over both clavicles. On both elbows were tubercular masses of the same colour and appearance. On the dorsum of both feet were yellow linear ridges. The palms of both hands were affected in a somewhat different manner. The epidermis was generally thickened, and all the chief flexure lines of the palm and the bends of all the fingers were raised into opaque whitish bands. The epidermis sometimes peeled off, and deep, very sore cracks were found. The condition of the palms became worse while he was in the hospital. The difference between this and other parts was probably due merely to the greater thickness of the epidermis.

Besides this xanthelasma eruption, the skin was almost universally mottled with lightish brown patches like freckles, which on the forearms might have been taken for the effect of sunburn, but were found also on covered parts of the body.

The skin generally, but especially that of the arms and legs, was thickened and inelastic when pinched up, just as in cases of prurigo, and had a scaly appearance from epidermic hypertrophy.

The patient complained of intense itching, and many parts of the body showed marks of scratching. There were also small, dry, hard, irritable papules; but these were chiefly seen on the flexor sides of the forearms, not on the outer side.

The mucous membrane of the mouth showed no pigmentation, but there were slightly raised ridges on the inside of the lips, something like imperfect xanthelasma. The mouth was sore, and while he was in hospital an ulcer developed on the left side of the tongue, for which no cause could be traced, and which healed leaving a scar.

There were some hard and slightly enlarged glands in the axillæ. There was very general, but not very intense, jaundice; and, independent of the jaundice, the mucous surfaces were extremely anæmic.

The *blood* was examined, and showed no excess of leucocytes, but many red disks were somewhat shrivelled and ill-formed.

The *urine* contained bile pigment, but no albumen, except for a short time during a febrile attack. Sp. gr. 1020.

On admission the following notes were made:

Liver.—Dulness commences at seventh rib, and extends 2½ inches below the ribs. Edge hard, smooth. Afterwards the liver is described as extending 6 inches vertically in axillary line, and 6½ inches in nipple line. The superficial veins enlarged over right half of abdomen. No fluid in abdomen.

[Before, however, patient was finally discharged in October, it is right to say, Dr. Bristowe could not satisfy himself that the liver was enlarged.]

Patient had never passed gall-stones, so far as he knew.

Lungs.—No abnormal signs when admitted. He afterwards had a little bronchitis.

Heart.—No increase in area of dulness. No murmur. Arteries rigid and tortuous.

Spleen could not be felt.

Intestines.—The most marked symptom when patient was admitted was profuse hæmorrhage from the bowels. The blood was florid, and often spurted out after the motions. This continued during nearly the whole of the time he was in hospital, ceasing a fortnight before he was discharged in October. There were no external piles, but "above the internal sphincter the bowel was greatly dilated, and covered with velvety protrusions, without any pedunculated tumours." The blood was bright red; the stools generally pale and clay-coloured, sometimes light brown; rarely dark coloured. This hæmorrhage was doubtless the cause of his intense anæmia. Whether it came solely from the rectum was difficult to say.

On two or three occasions he suffered from epistaxis.

Soon after admission in March he had severe cellulitis of the left arm, and afterwards of the scrotum. Much pus was discharged from both situations after incision. No cause could be assigned for this. The temperature during this attack rose to 105°. On several occasions during his stay in the hospital there was some rise of temperature, mounting up to 100°, 101°, or 102°, without obvious cause.

General history.—It is of great interest in these cases to know the respective date of commencement of the liver disease and skin disease, but the patient's statements on these points were confused and contradictory. He said he had suffered from the "skin disease" for eight years, but I gathered that this statement referred to the jaundice and pruritus; he had also noticed that "the skin was like the scales of a fish," referring evidently to the hypertrophied prurigo-like condition. The xanthelasma patches had been coming, as far as I could learn, gradually, but patient had not given much attention to them and could not say when they began, but it might have been at the same time as the yellowness. He could not say which part of the body was first affected. I should conclude on the whole that it began with liver disease, probably hypertrophic cirrhosis, induced by drinking, and that the xanthelasma came on gradually. There was nothing to indicate syphilis. The liver disease had possibly been held in check by the excessive intestinal hæmorhage which had lasted two years. For three or four years patient had been getting thin and weak.

Remarks.—This case was remarkable not only for the extent of the xanthelasma, but for the concomitant symptoms of intense itching, mottled pigmentation, and a thickened inelastic condition of the skin generally. Itching might be set down as a consequence of jaundice, and pigmentation of the skin also doubtless often follows scratching, though rarely in the very general form here seen. It is not impossible that the prurigo-like condition of the skin may have been also secondary to irritation and scratching.

In its general characters the case agrees with the twenty-three cases of xanthelasma multiplex tabulated by Messrs. Hutchinson, Sangster, and Crocker in the 'Transactions of the Pathological Society,' (vol. xxxiii, p. 381). The external appearance resembled that in several cases which have been figured. There was no opportunity for a microscopical examination of the skin.

In conclusion, I have much pleasure in acknowledging the services of my clinical assistants during the year 1883, Messrs. Green and Robinson, and in thanking my present assistant, Mr. Glover Lyon, for taking out the numbers from the hospital books.

MEDICAL MATTERS IN EGYPT.

By F. M. SANDWITH,
SOUS-DIRECTEUR DES SERVICES SANITAIRES ET D'HYGIÈNE PUBLIQUE.

It was in the year 1820 that Méhémet Ali Pasha under pressure from Europe laid the foundation of a Military Sanitary Service in Egypt, and five years afterwards, under French guidance, the first Board of Health was established, and means were then taken for treating the civilian sick and wounded.

Dr. Clot Bey, the originator of these reforms, soon found it necessary to establish a School of Medicine and Pharmacy together with a Maternity Hospital for the instruction of pupil midwives, who afterwards became practically lady-doctors.

The Board of Health underwent many changes of composition, and we find that in sixty years there have been no fewer than eleven important alterations even in the official name of this body. Twenty years after its foundation a special decree rendered it independent of any other administration, and its president received orders directly from the Khedive and his principal secretary. In this year the proposal was first made to organise a Sanitary Service for the interior of the country in addition to the one existing, which was for the army only; although the commonly received opinion was that no epidemic disease could originate in Egypt,

but must be imported from abroad. The idea was at once taken up, and very soon each province of Lower Egypt was granted an European doctor and apothecary, in addition to native medical men and women.

According to Dr. Neroutsos Bey, from whose pamphlet most of these historical data are taken, the sanitary state of Lower Egypt in 1844 was not unsatisfactory. The ponds and lakes which had covered the surface of the country had disappeared, cemeteries had been banished to a suitable distance from the towns and villages, and the markets of salt fish, with other nuisances, had been removed to a distance from all dwelling-places.

In the towns a daily inspection took place of all foods and liquors, in order to prevent the sale of anything hurtful to the public health. The enormous accumulations of rubbish and filth, which had been allowed to remain in towns for countless years, and specimens of which still survive in the dust-heaps of Old Cairo, were in great part removed, and means were taken to level the surrounding country by means of a daily service of scavengers.

Thousands of individuals were vaccinated every year by native surgeons and barbers, and were thus protected from a disease which previously had ravaged the country.

Those whose lot it is to work at sanitation in Egypt in 1884 sometimes compare with regret the intelligent energy of forty years ago with the state of affairs existing now.

When Méhémet Ali found that Egypt was kept in perpetual quarantine by Turkey and Europe generally, although no case of plague or cholera had occurred for more than twelve months, he invited an European Commission to examine into the sanitary condition of his country. This resulted in independent reports by French, Austrian, and Russian physicians, who had nothing but praise for the way in which the sanitary department was conducted.

In 1850 the present Prime Minister of Egypt, then Nubar Bey, was president of the Sanitary Service, and the following year France bore official testimony to the efficiency of the existing system in these words:—"I am able to affirm that positively no death of a suspicious character can escape the vigilance of the sanitary administration. The

exact death-rate being known day by day, not only in the towns, but even in the small villages, the least increase in the mortality excites the attention of the registrative authority."

This testimony is important as showing the difference between the model administration as created by Méhémet Ali and the lamentable degeneracy existing to-day. In considering this it should be remembered that in former days all superior officers possessed an European diploma, whereas of late years natives, possessing only an Egyptian certificate, have been nominated to high posts. At this time (1851) the ordinary native medical officer received an income from the State varying from £18 to £30 yearly, and Europe, always taking a motherly interest in Egyptian affairs, advised that their salary should be raised.

The cattle plague of 1863, which caused the death of 733,000 beasts, the epidemic of human typhus in 1864, which occasioned an extra mortality of 58,000 persons, and lastly, the cholera of 1865, during which 62,000 victims were officially registered, without counting unreported cases—these three fearful visitations must have severely tried the administrative organisation of the Sanitary Service.

It is worthy of note here that the reappearance of cholera in 1866 was officially denied, and that the Vice-President of the Sanitary Department was dismissed from his post in consequence of "trop de zèle" with regard to its discovery.

In 1877 the Sanitary Council consisted of twelve members, all Europeans, and in this year the budget was reduced from £90,000 to £62,000, and afterwards a further economy brought it to £54,000. The finances of the country at this time were not in a satisfactory condition, and Government employés had to wait till May, 1878 for their salary of December, 1876.

The Government found itself compelled not only to demand impossible economies from its officials, but refused to sanction every work which carried with it an expense for the State.

At the end of 1878 all sanitary quarantine and hospital buildings had fallen into ruin for want of funds, and the

provincial hospitals naturally suffered to a greater degree than others.

On January 3rd, 1881, the Sanitary Board was divided into two distinct councils; the one, with its seat at Alexandria, was called "Conseil Sanitaire Maritime et Quarantenaire," and by means of medical agents at the different seaports it endeavoured to prevent the introduction of human and animal disease. This Council, which still exists, is international, and is at present presided over by an English layman, Mr. W. F. Mièville. The other Council, called "Conseil de Santé," was made responsible for the sanitary and hospital service in the country. It was presided over by a native doctor educated at Munich, and consisted of thirteen members, of whom eight were medical men, two chemists, one veterinary inspector, and two engineers. The "Conseil de Santé" held frequent sittings and made many excellent proposals to the Government, but owing to want of power, money, and support few of them were adopted.

Two hospitals and two slaughter-houses at Tantah and Mansourah remain, however, as evidence of its activity. The cholera of 1883 tried it severely, and in face of the partial reforms which England commenced to carry out in Egypt, it was swept away on February 13th, 1884, to make room for the "Direction des Services Sanitaires et d'Hygiène Publique," which during the last eight months can hardly be said to have accomplished more than its predecessor.

It consists of a native medical director, who received his professional education in Paris, and an English vice-director, and is under the control of the Minister of the Interior. This direction is responsible for all measures necessary for the preservation of public health, the superintendence of twenty-three hospitals, and the general supervision of all Government doctors, apothecaries, veterinary surgeons, and midwives. To assist the director and vice-director in their important and responsible duties, a sanitary committee is appointed, consisting of the Sanitary Inspector of Cairo, the principal Physician and Chemist of the Cairo Hospital, the Director and Vice-Director of the Medical School, the chief Surgeon of the army, and any other person whose services may seem desirable to the committee.

The authorisation to practise medicine, or to hold the position of dentist, dispensing chemist, midwife, or veterinary surgeon, must be obtained from the Minister of the Interior on the advice of the Director.

Foreigners are admitted to practise with diplomas of their own country, and there is even one case of an Englishman duly authorised who possesses only the Philadelphia diploma.

So-called sanitation in Egypt includes many different duties. Among these are the treatment of stagnant ponds, the levelling of rubbish and manure heaps, the removal to a distance of cemeteries, rag-stores, tanneries, limekilns, and all other establishments usually considered dangerous to public health. The service also includes the inspection of streets, public baths, bazaars, mosques, abattoirs, markets, prisons, cemeteries, drains, and latrines. In the absence of municipal authority, many other functions are expected of the sanitary bureau, such as the registration of births and deaths, the examination of prostitutes, the inspection of food and drinks, and until a few weeks ago, the storage of petroleum.

Immediately under the orders of the "Direction Sanitaire" are the sanitary inspectors of Cairo and Alexandria, and the four inspectors of Upper Egypt. These officials are all natives, excepting Mr. A. H. Hooker, lately Demonstrator of Chemistry at Charing Cross Hospital. To him are due most of the improvements which have taken place in the heart of the Delta, but his native colleagues are hardly equal to the very difficult task of overcoming the prejudices which the fellaheen have against the blessings of pure air, food, and water. Each of the fourteen provinces is provided with a chief doctor, a hospital with doctor and staff attached, and further, with a medical man for each district of the province ; there are also generally two midwives and two veterinary surgeons in each district, besides a barber in each village. This chief doctor, who seldom now has an European diploma, is paid £180 a year, and is expected to assist at all medico-legal cases in his province, and to be responsible for all sanitary and veterinary matters. The hospital doctor replaces him when absent on his inspections, and with a salary of £120 a year has a better chance of

securing a private practice. Common report says that he occasionally adds to his income by detaining cured patients in hospital until their friends have seen fit to reward him.

The district doctors are, of course, the rank and file of the profession, and, taken as a whole, their medical and moral qualities leave much to be desired.

Taken from a very humble rank in life, receiving a very inadequate education from the Government, allowed to pass an examination in such of their studies as they have been able to commit to memory, they have been practically banished to a remote town, until such time as the friendly protection of some high official should procure advancement for them. Their pay was only £84 a year until the Director, "Dr. Hassan Pacha Mahmoud," wisely raised it this year to £96. With this salary the Government expects them to provide a donkey for their perpetual excursions, respectable clothing, and such board, lodging, and attendance as they and their families may consider necessary. They have but little opportunity of obtaining private practice, for the superstitious natives prefer the charms of the Koran and the incantation of wise women to such medical science as their physicians offer.

Some of these doctors are in medical charge of an immense number of villages, which they are supposed to be perpetually visiting, and some thirty-seven of them, chiefly in Lower Egypt, have each more than fifty villages to inspect. With no better transport than a willing donkey, in a country destitute of roads, it is of course impossible that due registration and vaccination should ever be carried out.

Take for instance the province of Beni-Souef, the smallest province in Egypt situated close to Cairo, and containing 141,000 inhabitants; within it there are 105 hamlets, with a population of about 100 each, and of these 10,500 people the Government has no sanitary knowledge whatever; no barber, and no register for births and deaths exist, and they are not even visited by the Government district doctors. The Government supplies this province with five doctors, two of whom, the "médecin-en-chef" and the hospital doctor, reside in the principal town. The other three doctors are accredited to the three next important towns, and each is

supposed to travel through all the villages of his division at least once a month, and to furnish a bulletin of births and deaths.

The statistics of other provinces in Upper Egypt are even less satisfactory.

Surely these members of our profession must not be judged too harshly by English critics if they occasionally yield to the prevalent custom of the country and obtain "backsheesh" from those whose interests they are supposed to guard. A dishonest man may occasionally threaten to cause some sweeping reform to be carried out in a village, unless a sum of money is immediately collected for him by the headman, or money may be obtained from a private individual by threatening to perform an autopsy on the dead body of his relative, on the plea that there is some suspicion of foul play. To the uneducated Mussulman, who believes that the dead can feel and should be treated with a respect similar to the living, this idea is naturally repugnant.

This belief in the retention of sensation by the dead body is not always confined to the ignorant, but is accepted even by men who have completed their hospital career.

We fear too that the modern system of examining all native prostitutes sometimes gives rise to monetary abuse, and lest it should be thought that perhaps these men are being unfairly accused, readers in England should be told that Government doctors, on a salary of less than £100 a year, have often been known to save, in a few years, sums of not less than £2,000.

The veterinary surgeons who now receive £84 a year may be fairly passed over with the remark that they are more ignorant, and not more honest, than their medical brethren.

The midwives are started in the world with a very elementary knowledge of the anatomy of the human pelvis, and of natural confinements; they are also instructed in the art of bleeding, and some other minor surgery, and in the application of midwifery forceps to the dummy.

Until this year they were always recognised as "hakeema," or lady doctor, but it is now agreed that their duties shall

consist only in visiting corpses of their own sex, and in legitimate obstetrics. They are instructed always to call in the aid of a medical man in difficult confinements, and are now prevented from giving an official opinion in medico-legal cases. Their existence is decidedly necessary, but their want of education renders them almost useless. Their pay varies from £30 to £48 a year. There are a number of "matrons" who practise midwifery on their own account, but the Government has but little to do with them after they have once received their certificates.

The village barber is the lowest grade of the sanitary service, and is an officer almost peculiar to Egypt. He is an unpaid official, appointed by Government, who has received no education, and who often can neither read nor write. He is a personage of some importance in his hamlet, and has recently been exempted from certain taxes by the Council of Ministers. It is he who practises circumcision and other small operations such as vaccination, &c., and in addition to these advantages he has probably less legitimate ways of making money. His duty is to examine male dead bodies, and to cause such diagnosis as he thinks fit to be registered in the village book as the cause of death. This system, universally carried out, is sufficient to show that statistics in Egypt are highly untrustworthy.

Female dead bodies are visited by a midwife or by the wife of the barber, and every case of suspicious death in either sex ought to be reported to the doctor of the district, whose duty it also is to examine the village registers.

The insanitary condition of Egypt is difficult to describe, to those unacquainted with the country. The miserable mud huts, partially underground and absolutely devoid of ventilation, are surrounded by heaps of manure, which the fellah prefers to keep as near his dwelling-place as possible. His hut usually contains his family, his live stock, and an indescribable odour.

In the villages no private latrines exist, and the bank of the canal, whence drinking water is obtained, is used for domestic purposes, for the reception of all filth, and for slaughtering animals. Mosques in town and country are all provided with a basin for the ablutions of the faithful, who

frequent it eagerly and are quite content if the water is changed every three months. Around this basin are placed a number of untrapped stinking latrines, communicating with a common drain, which in most cases empties itself into the drinking-water supply of the neighbourhood.

An examination of most of the principal mosque drains in Lower Egypt this year showed that 73 per cent. of them ended directly in the Nile or in the canals which supply drinking water to the villages. Another 23 per cent. found their way immediately into large stagnant ponds surrounded by houses, in which cattle drink and barelegged children paddle. Of the 4 per cent. remaining either the termination was not distinctly defined, or in default of a canal ready to hand, large uncemented cesspools existed, which were inefficiently emptied every two or three years. The Egyptian firmly believes that the mysterious Nile is sent to supply him and his thirsty land with drink, and also to carry away the sewage which he has not yet the intelligence to convert into manure. Allah is invariably held to be the author of any disease which happens to arrive, and unfortunately the "Koran" and the Sheik-el-Islam do not recognise the contagion or infection of disease. Two illustrations of insanitation may here be quoted:

Cairo, the capital of Egypt, with a population of 400,000, is completely traversed by a small canal, called in Arabic Khalig. This canal derives water from the branch of the Nile running between Old Cairo or Fostat (camp of tents) and the Island of Rodah (pretty garden). In August, at high Nile, the dam of this canal is cut with great ceremony and rejoicing, a custom which seems to date from the time when the River God was universally worshipped.

It is doubtful now whether Nilus confers an unmixed blessing on the inhabitants, for the Khalig as it passes through the town is an open drain, receiving refuse of all kinds from the houses on its banks, and being the recognised receptacle of all cesspools, which empty directly into it when full of water, and which, when the Nile is low, remain closed, ventilating into the houses only. It must be difficult for those who have never lived in Egypt to believe that the same people who deposit all manner of filth in the

Khalig, use the same water for drinking purposes, and that special channels actually convey the water to a distance of a quarter of a mile, in order to supply underground cisterns with a winter store of drinking-water.

To this it need only be added that these water cisterns are in close proximity to the cesspools, and that neither one nor the other is cemented or undergoes any adequate cleansing.

To make matters more difficult, the Government charges a tax of from four to eight shillings on every tank which is cleansed, and it is only very recently that the tax for emptying cesspools has been abolished.

It is only fair to state that the Ministry of Public Works would have already attempted to remedy the nuisance of this Khalig if the finances of Egypt had permitted.

The second illustration is taken from one of the most important towns in Egypt.

Port Said, with a population of about 12,000 natives and 5000 Europeans of all nationalities, is an impromptu town, which originated in the huts of the workmen when the Suez Canal was first commenced twenty-five years ago. It stands on a narrow strip of sand, 200 to 300 yards broad, between Lake Menzaleh and the Mediterranean, its site having been formed by dredgings from the harbour thrown into the shallow lake. The surface of the town is perfectly flat, and only from four to five feet above the sea level; and the soil being composed of sand, its moisture, two feet above the water-line, is 50 per cent. Yet the Suez Canal Company have permitted their employés to build their houses and cellars after the European type, and to provide themselves with uncemented, unventilated cesspools and water-reservoirs underground. The condition of these cellars is better imagined than described, and they account for a good deal of the horrible smell which is perceived on walking through the streets. It only remains to be said that some of these cellars are inhabited by the poorest of the Company's workmen.

Those who live in houses not provided with cesspools throw their refuse into the streets, while those who have

them employ a night-cart for the removal of their contents, which are then deposited on the beach to the north-east of the town.

This beach, from over which the prevailing wind blows, is often in a most disgusting condition, being covered with fæcal matter, the carcasses of animals, and all the indescribable refuse of a town, breeding myriads of flies, and feeding pigs and dogs by scores.

Nile water, unfiltered and in very insufficient quantity, is brought to Port Said from Ismailia by means of pipes.

The Egyptian Government considers itself to have been badly treated by the Canal Company in former years, and but little now is done to remove that impression.

The general insanitary condition of the houses of the employés is, doubtless, partly caused by the high ground rent of £16,000 per acre at Port Said. These examples of carelessness of public health might easily be multiplied, but they are enough to show the favorable site Egypt provides for a visitation of cholera.

In 1866 there were cases of cholera in Egypt from March to November, and although no complete report of this outbreak has ever been made, it is calculated that there were more than 400 deaths, there being at one time sixty a day at Alexandria alone. Most of these cases were returned as choleriform or cholerine. It was not unnaturally expected by some that the epidemic of 1883 would be followed by a reappearance of disease in 1884, but in spite of careful search no very well attested cases have been reported.

At the end of April, 1884, three suspicious cases occurred at Cairo in English soldiers, belonging to the army of occupation. One case was at the Citadel Hospital, and the others at the hospital at Abbasseeyeh. These three men suffered from cramps in the limbs, vomiting, diarrhœa, aphonia, facies choleraica, and extreme collapse, resulting in the algide condition, and though they were dangerously ill for only one day doctors with Indian experience agreed that they would have been returned as cholera cases if they had occurred during an epidemic. These cases were carefully concealed at the time and were not followed by others.

By the courtesy of Dr. A. M. Davies I am enabled to give

the notes of the case at the Citadel Hospital to which I refer: —J. B—, æt. 24, was admitted on April 26th, having been attacked in the early morning with diarrhœa, vomiting, and cramps in legs, and when seen, shortly after admission, was in a state of collapse, almost pulseless, with eyes sunken, body cold, tongue cold, and cramp in legs and abdomen. He was ordered three doses of cholera mixture in quick succession, followed by gr. x of quinine. At noon his pulse could be felt, and he had partially recovered from collapse, but his eyes were still sunken.

He had one rice-water motion at 11.30 a.m., and his bowels acted six times in the afternoon; the motions were small and loose, at first white, and later yellowish. For this he was ordered Pil. Plumbi cum Opio gr. iv every three hours.

During the night he vomited twice and passed one small rice-water stool at 2.15 a.m., when he also passed urine for the first time since early in the morning of the previous day.

The note on April 28th is: "No more stools; patient convalescent."

On April 30th he passed a formed motion, and on May 1st he was allowed to get up.

This case was returned officially as "diarrhœa," but if it had occurred during a cholera epidemic it would have received that name.

In the middle of May an English doctor, fresh in the country, was attacked within twelve days of his arrival in Cairo with serious choleraic diarrhœa. For twenty-four hours he suffered from copious vomiting and diarrhœa, with occasional cramp in the calves of the legs. The motions were characteristic, and consisted of pale dirty water with a little loose, white, flocculent *débris* floating in it; they had a faint odour, which was not fæcal, and they were not attended by pain, tenesmus, or discharge of blood. The vomit was very watery, similar to the dejecta, and relieved the patient. The urine was not suppressed, and there was no collapse. Pulse remained full, and temperature about 99° with slight sweating. The patient, who possesses a very equable temperament, betrayed no anxiety about his condition, and was practically cured two days afterwards.

During this month cases were seen independently in Cairo by at least three European doctors, which would have been certified as "cholera nostras" if they had not recovered.

In June of this year an outbreak of diarrhœa and vomiting at Damietta was reported, but it is certain that no one died from any choleraic affection. The town at this time was reported to be clean, and the mosque drains, though at low Nile, were no worse than usual.

On July 14th, the first case of cholera was officially reported at Alexandria, and caused greater excitement than it deserved. The facts are as follows:—An Austrian woman cook, aged 40, living in an Italian restaurant, had suffered from diarrhœa for a few weeks, for which she had been treated by a medical man, and which did not prevent her from working as usual. On the night of July 13th she is stated to have had forty rice-water motions, accompanied twice by vomiting. She was taken to the European Hospital early on the morning of the 14th and had neither vomiting nor diarrhœa for several hours. Her condition on that morning was described by all the doctors who saw her in the following terms; facies choleraica, loss of voice, fall of temperature, foul tongue, intense thirst, severe cramp in the calves and thighs, complete suppression of urine, collapsed pulse, and great mental anxiety. These symptoms abated slightly towards evening, when there was one liquid motion, followed for a time by very severe cramp in the thighs. On the 15th there was no more vomiting, the diarrhœa was insignificant, the voice had partly recovered its strength, and the cramps and suppression of urine had disappeared. Thereupon four doctors signed a bulletin to the effect that the case was one of "cholera nostras," and two days later the patient was quite convalescent.

During the remaining summer months no cholera was known in Egypt excepting one case on board a French steamer, which was then in quarantine at Alexandria. This steamer had just come from Marseilles, which was at that time a focus of disease.

The whole number of our medical brethren in Egypt is about 400, for a population of four millions. This number

does not include those who may now be in the Soudan nor the surgeons of the British army of occupation.

About 200 are natives who have been educated at the Medical School of Kasr-el-Ain, and of this number about 40 possess European diplomas, obtained mostly from Paris or Montpellier, with a very few from Pisa, Munich, and Aberdeen. The remaining 200 are of all nationalities, as shown by the following table, from which will be seen that Greece and Italy contribute more than one half of the medical practitioners of the country.

Foreign Doctors, Apothecaries, Veterinary Surgeons, and Midwives in Egypt.

Nationalities.	Doctors.	Apothecaries.	Veterinary Surgeons.	Midwives.	Total.
English . .	24	1	1	4	30
German . .	17	16	...	1	34
Austrian . .	6	3	...	16	25
American . .	2	...	...	...	2
Belgian . .	1	...	...	...	1
Brazilian . .	1	...	...	...	1
French . .	16	7	2	9	34
Greek . .	72	9	...	19	100
Dutch . .	1	...	...	...	1
Italian . .	39	28	6	18	91
Polish . .	1	...	...	...	1
Persian . .	2	...	...	...	2
Russian . .	2	...	..	...	2
Swiss . .	3	3	...	2	8
Swedish . .	2	...	...	...	2
Turkish . .	9	9	...	...	18
Spanish . .	...	1	...	...	1
	198	77	9	69	353

One Italian and two native doctors now living have attained to the rank of Pasha, and there are at present about twenty native Beys, and ten European doctors, including one Englishman, who have received this distinction.

Every other native doctor, in common with all his countrymen who wear the black official coat, is styled Effendi. No permanent improvement can take place in

these Effendis until they are drawn from a less humble rank in life. The medical career is not popular in Egypt, and with the exception of a few self-made doctors no Pasha or Bey would dream of making his son a medical student, and the consequence is that any barber or chief "infirmier" who has learnt how to read and write may petition to become a student of medicine. To-day there are native doctors in Cairo at the head of their profession who, sprung from lowly parentage, but educated at home and abroad at Government expense, have now by creditable exertions raised themselves to a post of honour and respect and an income of more than £1000 a year.

Returning from the delights and studies of Paris they were invited to serve their country by becoming medical attendants to a royal harem, or by entering the then popular army at the pay of £72 a year, from which they were transferred through influence or merit to a vacant Professorship at the Medical School.

Although Copts number about one tenth of the native population, and are perhaps the purest descendants of the ancient Egyptians, so famous for their medical knowledge, there are now only three Coptic doctors in the whole country, and this is one of their numerous grievances. There is, however, a bone-setter of that religion who is stated to perform wonderful cures. Not very long ago an unfortunate woman dislocated her hip, and was attended for a time by a midwife because her husband objected to her being seen by any male doctor. The bone-setter was quite equal to the occasion and had no desire to see the patient, but gave instructions that a half-starved cow should be tightly bound to the woman's hip and then fed, until the rapid swelling of the cow had caused the reduction of the dislocation. An Anglo-Armenian, who tells the story, firmly believes in the truthfulness of the tale and the success of the measure.

This paper purposely refrains from giving any account of the present unsatisfactory state of the National School of Medicine. It will be sufficient here to say that it is dependent on the Minister of Public Instruction, whose fame is chiefly that of a learned Astronomer, and that after six

years' medical education, preceded by a training of eight years at Government schools, with a total cost of £850 to the State, the newly-qualified practitioner is launched into the world, wholly ignorant of any European tongue, and with a very inadequate knowledge of any part of his profession. The director of the school has proposed some salutary reforms, with but little encouragement from the Government, but even he is passively opposed to the introduction of an European language or European teachers.

By the existing arrangement the Sanitary Department has no voice in the education of medical students, and no control over them until they have received their certificate to practise.

Much might be written about the Mussulman and Coptic superstitions for healing the sick, but I shall only mention those which have been personally reported to me.

The lowest classes never seek medical help until the patient is actually moribund, and it need not be said that the different recipes of barbers and old women sometimes aggravate rather than improve the condition of the patient. They have great faith in written charms, which usually consist of passages from the Koran for Mahometans, and of the Psalms and Gospels for Copts, intermingled with numerical combinations, diagrams, and symbols. These are supposed to have occult virtues for healing all kinds of diseases.

Moslems also often immerse their patients in the tanks of ablution in the Mosques, and Copts call priests to anoint the sick with holy oil, and to pray over their heads, or give them the Holy Communion.

Persons of all creeds having evil spirits are said to be cured at certain Coptic convents, such as St. Damiana's, near Mansourah, and St. Michael's, near Birket-el-sab.

I have the good fortune to possess a brass bowl embellished with inscriptions from the Koran, which are supposed to have been engraved during the moment of an earthquake, which latter is *not* one of the plagues of Egypt. Some Coptic women begged to be allowed to drink from this bowl the day before it was given to me. The inside of the bowl has attached to it a revolving piece of brass, from which hang forty-one oblong brazen strips, on each of which is

engraved "In the name of the most merciful God." The mysterious Mussulman numbers seem to be seven and forty-one. In this bowl is placed on a Friday night Nile water with some unknown drugs and nuts; the next morning, before sunrise, the patient is instructed to stand in a basin of water, to drink out of the bowl, and to eat the nuts, throwing the shells behind his back. This operation must be repeated on three consecutive Fridays, and is warranted to cure all diseases which are not fatal, *i.e.* permitted by Allah.

A Coptic friend has also given me the metacarpal bone of a Jew, carefully wrapped in a blue muslin rag. This is worn by Copts and Mussulmans to cure fevers of all sorts, and any bone will suffice provided it comes from an unbeliever or from a mummy of the ancient Egyptians.

It is believed by both Copts and Mussulmans that a bride if visited by persons wearing Venetian sequins, or old gold ornaments, will never become a mother, and there are many remedies for barrenness, each to be scrupulously repeated seven times. For instance, the woman should step over the corpse of an executed criminal, or into a basin of water which has been used to wash his corpse; or tread on a human skull, or walk between the tombs of a cemetery, or step over some antique resemblance of a cat, or other relic of old Egypt.

Nearly every native, of whatever religion, wears a charm, to protect him from disease and the Evil Eye. This consists of a scroll of special chapters from the Koran, or Coptic, or Hebrew Bible, according to the religion of the wearer. One of the most intelligent and well-born Orientals in Egypt waited for three days this autumn to hear chapters of the Koran, and to bind sacred parchments on the parts affected, before sending for a doctor to be cured of rheumatism.

In a country where ophthalmia is so rife numerous alleged cures exist, such as wearing a red bead or gold ornament on the forehead, or rowing across the Nile at Cairo to deposit a lump of mud on the further shore. During the process of some of these cures, it is considered most important that the eyes should not be washed for forty days, and it is not uncommon to see children with both eyes completely covered

with a dry scab, which the parents refuse to have removed, although pus may be streaming down the child's cheeks.

The native cure for a stye is to eat bread obtained from seven different women, each called Fatima, the name of the Prophet's daughter.

Headache is cured by driving a nail into one of the gates of Cairo, Bab Zouela, and for toothache it is considered necessary to extract the tooth, and deposit it in a crevice of the same gate.

One of the most frequent antidotes for poison is to write the following extracts from the Koran: "And he will heal the breasts of the believers;" "Wherein there is a remedy for man;" "And when I am sick he heals me;" to place the texts in a dish of water, stir till the writing is dissolved, and then drink the solution. This prescription might be safely recommended to homœopathic practitioners in England!

Innumerable remedies exist to counteract the dreaded effects of the "Evil Eye" (envy). The most efficacious is to steal a piece of the dress of the envier, burn it, and fumigate the envied person with it. Another very common measure is to heat alum, and to prick one of the water bubbles, saying at the same time, "I prick the eye of the envier."

Cornelian and charcoal are worn on the forehead by Mussulman children for the same purpose, and a pretty child is preferably called "ugly" by its parents, who sometimes also keep a monkey or gazelle in the house to keep off the Evil Eye.

In one case lately where a mother intermarrying with a near relative had lost several children, she decided to keep the child's face covered with a cloth in a dark room in order that no harm might befall it; the child lived twelve months in this way, and during that time was never seen, except by its father and mother.

Circumcision is generally practised by Copts as well as Mussulmans, excepting in Cairo and Alexandria. Some look upon it as a religious rite, although the Coptic Church declares it not to be so, and it usually takes place at the age of four or five years. A few years ago a Cairene Copt, who wanted to marry a fellah girl, was obliged by her relations to be circumcised at the age of twenty.

Clitoridectomy is practised on children by Muslims and Copts without exception, but it has nothing to do with religion.

A curious custom exists in certain parts of the Soudan, which although well known to Egyptian doctors, has not perhaps been reported in England. Every girl when she reaches the age of seven or eight is placed in the hands of the barber, who is of course the chief surgical operator of the country. He proceeds with much ceremony and a sharp stone to pare the edges of both labia majora from top to bottom, and to unite the raw surfaces by rough sutures. A reed is placed in the urethra, and one in the vagina, to secure the passage of urine and menses. During the marriage ceremony a public inspection is made of the condition of the cicatrix, and the opening into the vagina is slit up to a greater or less extent.

In a Soudanese primipara, who was confined this year at full time at the Cairo Hospital, the opening into the vagina was situated very close to the anus, and just admitted the tips of three fingers. Above this opening the united labia for about one and a half inches covered in a cul-de-sac reaching nearly to the pubes, and above this again was the opening of the urethra entirely cut off from the cul-de-sac. The clitoris of course had been removed. The curtain formed by the united labia was a great obstruction to the passage of the fœtal head, and had to be freely incised before delivery.

One of the favourite articles of food of the low-born Egyptian is Fissik, an evil-smelling salted fish, which is only preserved after having undergone several days' decomposition, but which produces a revenue for the Egyptian Government of £80,000 a year.

I have had some of these fish analysed, and find that in 100 parts there are 38 of flesh, 9 of intestines, and the remaining 53 are made up of head, tail, skin, bones, and scales. The intestiues are full of mud, and are generally in an advanced state of decomposition, but the buyer considers it a pleasure to eat the whole fish, so far as it is possible, just as we eat preserved sardines.

Fissik is occasionally used as a poultice for ophthal-

mia, and is recommended by the Faculty as suitable diet for dysentery and typhoid fever; the gills are also burnt, and are used for fumigating persons suffering from fever.

Two official instances lately occurred, which typify the manners and customs of the interior of Egypt.

Less than a hundred miles from Cairo a Greek doctor was sent to take medical charge for the Government of the town of El Fachen. He was entirely unknown in the neighbourhood, but when the inhabitants discovered that he was a Christian, he was chased back to the railway station by the Cadi and the head men, with "naboots," bludgeons, menaces, and stones, and it need not be added that he sent in his resignation as quickly as possible.

The following letter speaks for itself, and was sent in perfect good faith and seriousness to the Sanitary Department.

"Sir,—Owing to the absence of a sanitary officer at Genefeh the station master of that village is always called upon to certify as to the cause of death. The station master being only bound to look after his own business, I have the honour to request your Excellency to take such steps as you consider proper for the appointment of a sanitary officer.

"I have, &c., &c.,

"(Signed) *The Pasha at the head of the Railway Administration.*"

Dr. Abbate Pasha, private physician to the Khedive, after forty years spent in Egypt, states that "hashish" is only used now among the lower classes.

During the last twenty years, however, a new evil has arisen among the rich occupants of fashionable harems, and some of the highest native ladies of the land are said to be addicted to the pleasures of morphia injections.

We can easily understand that women leading a luxurious, sedentary life, whose literature consists of voluptuous romances, and whose mental tendency leads them toward the fascination of imaginary nervous diseases, would easily fall a prey to a delicious sedative for bodily and mental troubles.

Abbate Pasha writes:—"With the prick of a needle, the

distress of mind and body is forgotten, together with the injustice of men and of fortune, and together with all unsatisfied burning passions and unrealised dreams of another existence.

"It is not difficult to understand the irresistible hold of this marvellous poison, inevitable and delusive remedy for unsatiated criminal relations, for impassioned and illicit love."

But serious blame is cast upon the reprehensible connivance of certain native doctors, who are willing to earn for themselves any easy prestige, and a shortlived gratitude by pandering to the weaknesses of their neurotic patients. For this purpose the doctor, who barely possesses another instrument for the practice of his profession, takes care to be well provided with a subcutaneous injection syringe.

No Poisons Act exists in Egypt, and this abuse of morphia is alone sufficient to necessitate some restriction being placed upon those druggists who supply large quantities of the alkaloid without scruple and without prescription.

The annual income of the Sanitary Department has been £60,000 for five years, but in 1883 the cholera cost Egypt £65,000 in addition, besides the loss of life and interference with the country's commerce and revenues.

In order to try and prevent the recurrence of this disaster the sanitary budget has now been raised to £70,000.

The two following stories will show one of the many difficulties to which the department is subject.

In April of this year it was reported at head quarters that typhoid fever had suddenly broken out at the village of Basatin, four miles south of Cairo. Information was at once sent to the chief doctor of the province, asking for daily bulletins and a report on the outbreak, and also that one doctor should be told off for special duty at the village itself. The bulletins being unsatisfactory, and no report forthcoming for five days, the vice-director visited the spot himself. He found that the village consisted of 1000 inhabitants, of whom twenty had already died, fifteen were convalescent, and thirty remained sick, *i.e.* 6·5 per cent. of the people had already been attacked. The epidemic had apparently been in existence for forty days, or five weeks

before it was reported, and it should have been called typhus and remittent fever instead of typhoid.

Two Government doctors had visited the place, but no means had been taken to trace the causes of the outbreak, to examine the water-supply, or to clean the interior of the huts, which were crowded with goats and dirty rubbish.

At the end of August typhoid fever was reported from a small village near Zagazig, and this was then proved by Mr. Milton to be typical typhus, which had been smouldering for two months, and had been carefully concealed by the Sheik of the village. Even when hospital tents were established for thirty patients, and the people treated with the greatest consideration, this Sheik, who had already lost ten members of his family, concealed thirteen people in a room in his house, two of whom were found to be suffering from the disease when the house was searched.

Mingled with these well-marked typhus patients several were found suffering from relapsing fever, in whose blood Dr. F. Engel afterwards found the *Spirochæte Obermeieri*.

Such incidents as these will convince the reader that possibly a special providence, but certainly not the Government officials, are responsible for the occasional absence from Egypt of such diseases as cholera, smallpox, and cattle-plague. It is not necessary here to refer to the veterinary questions which cause much anxiety, except to say that cattle plague (bovine typhus or rinderpest) is apparently endemic in Egypt, and that diseased beasts are hidden in the cottages of their owners, who eat the flesh of those that die and sell their hides and hoofs.

In 1876 a curious murrain, called "equine typhus" carried off 32,000 horses, mules, and donkeys. This was perhaps anthrax.

The sanitary *personnel* to-day consists of 150 doctors, of whom 130 are natives and 20 are Europeans, numbering among them 5 Englishmen; there are also 34 apothecaries, 3 chemists, 35 veterinary surgeons, 44 midwives, 57 clerks, and 370 "infirmiers" and servants, making a total of 693 in all. This does not include 72 wet-nurses, who are engaged by the Government for foundlings in the towns.

The Khedivial Laboratory, under the direction of Monsr.

Ismalun, one of the few laymen in Egypt who takes an intelligent interest in matters of science, is partly dependent on the Sanitary Department. Its chief duties consist in analysing water, sugar, minerals, soils, manures, money, food, and liquors, while Dr. Sonsino is especially engaged in studying the question of the cotton-worm and of human entozoa. There is also attached to it a small national museum and a useful meteorological department.

Native prostitutes are now examined weekly in all the principal towns of Egypt, and European women are also visited at Port Said. In Cairo there are about 600 natives on the register, varying in age from ten to fifty, of whom one twelfth are usually sent to the hospital every month. The annual revenue from this office is £300, made up by fines of four shillings each, and by a monthly charge of half a franc for a new certificate. In Alexandria there are, as far as we know, 400 native prostitutes.

An enormous number of boys practise this calling, and many of them are known to the police, but no official register is kept of their names.

Cairo boasts four hospitals, one of which is used chiefly by Europeans, and is not under Government control. Of the others, two are at Abasseeyeh in the ruins of a former palace, and are respectively used for the Egyptian army and for the lunatics of the country. By far the most important, however, is the institution called Kasr-el-Ain, to which is attached the School of Medicine, the service of the hospital being chiefly carried on by the professors and students.

Mr. Milton, late of St. Thomas's, is now "médecin-en-chef," and has already worked some important changes in the conduct of the hospital. The total number of beds is 600, divided into the six sections of surgery, medicine, diseases of the skin and syphilis, eye diseases, prostitutes, and the harem. The average number of patients is 400, and these are attended by six Professors, paying daily visits to the wards. The teachers of physiology, legal medicine, anatomy, chemistry, materia medica, hygiene, midwifery, pathology, and physics belong to the school, but have no hospital beds.

Ninety male students, representing four out of the six

classes, are supposed to work in the hospital, but they never see any female patients, the work of the harem being done by thirty female students.

The following are some of the hospital peculiarities proper to this country :

The resemblance to infirmary work in consequence of injuries and diseases of the most trifling character being admitted ; the practical absence of all out-patients ; the absence of any nursing and of any moral control on the part of the ward attendants over the patients, together with the difficulty of keeping serious cases in bed and trivial cases away from their beds ; the absence of any clinical teaching, note taking, thorough physical examination, thermometry, &c. ; and the comparative absence of surgical casualties with the exception of scalp wounds. The arrangements for dispensing medicines are most imperfect, though the dispensary is sometimes cleaner and neater than any other part of the hospital. An apothecary accompanies the visiting doctor on his rounds, writes the prescriptions on a sheet of paper, copies them afterwards in a book, and then administers the medicine for twenty-four hours in one dose.

About 95 per cent. of the patients are in hospital against their will, and are either sent by the Mudir and the police, or are Government employés, prisoners, foundlings, hospital children, idiots, or prostitutes.

Of these "children of the hospital" there are usually thirty-five at Kasr-el-Ain, with no pretensions to illness, but living there because they have no home, and even at the lunatic asylum the system was always carried out of keeping any child born of an in-patient, so long as the mother remained under treatment, even for such a term as ten years.

There are usually about three major operations every week, and nearly all these, including lithotomy, were formerly done without chloroform. Refractory patients in former days were punished by confinement and by chains, anklets, and handcuffs.

The hospital diet consists of two meals every day, at noon and at six, at both of which a plentiful meal of bread, meat, rice, and soup is provided. Insect life is a great drawback to hospital comfort, and it was not uncommon to see most of

the patients sleeping in the corridors at night to escape the bugs with which their beds were swarming.

Three hundred pounds worth of instruments exist in the hospital for its own work and for the general hospital service of the country, but until two months ago no man existed in the country capable of repairing them, or even of sharpening a scalpel.

About 2000 Government employés are examined annually for pensions by a medical commission at Kasr-el-Ain, and it used to be a common thing for a young man to be put on the pension list for a slight necrosis without attempting any operation. Legal medicine is carried out in a casual way, and it is even whispered that a Professor has been known to receive money for giving a satisfactory verdict. Wounds made during the autopsy have been known to be returned as the cause of death, and a very short time ago, when a case was about to be called "fracture of cranium," a by-stander pointed out that the injury, the loss of a clinoid process of the sphenoid, had been caused by the pathologist.

Egypt has only one lunatic asylum containing about 300 patients, and although now in a ruined palace near Cairo, it was until three years ago in a miserable house in the town, which has since then been condemned for all purposes of habitation.

A year ago public attention was called to the asylum in consequence of a visit made by Dr. Acland and others, and although many improvements have now taken place, and the instruments of punishment have been removed, its condition leaves much to be desired.

The patients have no means of employing their time, though their uniform docility might easily be utilised for cooking, gardening, carpentering, washing, and mat making. No classification of mental diseases has yet been attempted, but we know roughly that many of the cases are produced by the abuse of "hashsheesh," and that most native lunatics affect chronic melancholia, rather than any acute mania. For this reason many of them are kept by their friends in their native villages, and those chronic lunatics without relatives who are discharged from the asylum are received at the "Takiya" or Asylum for Incurables near

Cairo. This establishment is under the direction of the Ecclesiastical Commissioners, called "Wakfs" in Egypt, and besides pauper lunatics and maimed beggars, there are some very young children of both sexes, of healthy, intelligent appearance, whose only fault would seem to be that they are the offspring of paupers.

I visited the barrack last April, and found 139 inmates kept in a very disgraceful condition, many of whom complained bitterly to me that they were detained there against their will, and that they were sometimes half starved and put in chains. One full-grown young man was walking about stark naked in the presence of women and young girls, and most of the men were clad in a very inadequate manner. Very little is known about the Mosques and institutions which depend on the "Wakfs," but I had the curiosity to discover that more than £1600 was paid last year for emptying the cesspools of the latrines used by the faithful; this represents 134,000 cubic metres or about 13,200 tons of solid sewage matter.

The Mosque cesspools of Cairo alone cost £1145, which was paid for removing about 7000 tons of fæcal matter, and the whole of this valuable manure is at present wasted in the desert. With the sewage arrangements of Egypt should be studied the prevalence of intestinal disease, and taking the death-rate of Cairo and Alexandria, where alone it can be considered fairly accurate, during the first five months of 1883 and 1884, we find that out of a total of 19,439 deaths, 5466 or 28·1 per cent. were caused by bowel complaints.

Out of this number Cairo is responsible for 33·9 per cent., and Alexandria for only 17·5 per cent., or about half the average at the capital.

The following table also shows that in Cairo there was no great difference between the number of intestinal cases in the year preceding and the year following the cholera epidemic, whereas in Alexandria the number fell from 860 in 1883 to 313 in 1884.

Cairo.

Diseases.	1883.						1884.					
	Jan.	Feb.	March	April	May	Total.	Jan.	Feb.	March	April	May	Total.
Dysentery	159	129	188	146	129	751	148	131	118	119	131	647
Gastric and Typhoid Fever	99	99	92	106	137	533	71	71	84	153	193	472
Gastro-enteritis	199	154	229	159	241	982	176	149	146	180	257	908
						2266						2027
All other diseases	900	711	941	773	909	4234	874	756	812	841	851	4134
						6500						6161

Alexandria.

Diseases.	1883.						1884.					
	Jan.	Feb.	March	April	May	Total.	Jan.	Feb.	March	April	May	Total.
Dysentery	54	51	53	45	34	237	23	24	26	20	24	117
Gastric and Typhoid Fever	50	52	89	93	76	360	15	22	22	13	26	98
Gastro-enteritis	83	60	44	41	35	263	27	30	9	12	20	98
						860						313
All other diseases	634	636	675	586	557	3088	512	455	486	492	472	2417
						3948						2730

This paper cannot be concluded without at least mentioning some of the diseases which are commonly met with in Egypt.

With all the causes which should produce malaria it is wonderful that more intermittent and remittent fever is not present.

Enteric fever is very rife and is often returned under the names of gastric fever, gastro-enteritis, and diarrhœa.

Typhus is often present in the villages, but is not always recognised and reported and is often masked by relapsing and remittent fevers occurring at the same time.

Smallpox is often brought by negroes, but it does not seem to have caused any recent epidemics, and it is not more common here than in England to meet with people severely pitted by the disease. There are public vaccinators in Cairo and Alexandria, but the rest of Egypt is dependent on the district doctors and barbers.

Children are vaccinated in three places on each arm, and on the eighth day the operator scrapes off the scab, vaccinates other babies with the blood and matter from the open sore, and afterwards preserves so much of it as he requires between two thick glass squares; the scab is always utilised by being cut up in small pieces and mixed with the vaccine matter on the glass. Revaccination is very rarely carried out in Egypt. In fourteen of the principal towns of Egypt, with a joint population of 778,021, I find that in 1883 there were registered 39,444 births and 28,496 successful vaccinations. Assuming that in these towns no revaccination had been recorded, 72·24 per cent. of the children born had therefore been vaccinated.

Measles and scarlet fever are rare, but dengue has been common of late years.

Dysentery is very common amongst natives and Europeans, causing many deaths. Hæmorrhoids and anal fistulæ can be reckoned among the constant but less important diseases.

Abscess of the liver and other hepatic diseases are common, together with a whole tribe of entozoa.

Among chest complaints, bronchitis, influenza and whooping-cough, are often seen, but pneumonia is generally met with as a complication of other diseases. Phthisis is by no

means unknown though it is rare in Upper Egypt, where the dry climate is often a great aid to the consumptive and asthmatic invalid. Palpitation, without heart disease, is a very common symptom among the natives, and hundreds of instances are seen amongst soldiers and recruits, who perhaps wilfully encourage it by smoking tobacco and hasheesh.

Infant mortality is very high, and Egypt is said by Dr. Lombard, of Geneva, to lose a greater number of children from convulsions than any other country.

Sunstroke and tetanus are not rare, and goitre, cretinism, and cancer are inaccurately said not to exist.

Ophthalmia, specially called Egyptian, though not different from that of other countries, is everywhere met with, especially in Lower Egypt and around Cairo. Acute and chronic inflammations, with and without granulation, trichiasis, entropion, ectropion, chemosis, and perforation of the cornea are met with at every turn. Nearly all ophthalmic disease accompanied by discharge would seem to be contagious, and it is probably sometimes spread by the flies which cluster round the eyes of the native children, whose swollen eyelids and even orbits are occasionally found to contain many maggots.

Cataract is very common, and is sometimes operated on by native quacks in the most primitive fashion.

I was invited once to examine the childrens eyes in one of the best day-schools in Egypt. The school consisted of 283 boys and 184 girls, and this whole number of 467 were found affected with chronic granular ophthalmia, while three of them had in addition an acute attack with a plentiful discharge. Twenty of them also had old ulcers in the cornea, and three other boys had each one eye completely disorganised. The native teachers were not better off than the scholars, but it is only fair to say that the proprietor of the school was horrified at my report, and afterwards did all he could to prevent overcrowding and the spread of the disease.

Urinary calculi are very common, and are often associated with *Bilharzia hæmatobia*, which Dr. Sonsino has found in the thickened bladder and ureters and in the portal vein. Lithotrity is hardly yet introduced, but many native sur-

geons successfully cut their patients for stone by the median operation.

Confinements as a rule take place with great ease, and very young primiparæ are in labour sometimes only for two hours.

Syphilis is as common as in a London out-patient room, and is seldom rationally treated. Scabies and carbuncle are unpleasantly common, and I have heard of cases of guinea-worm though I have never seen it. Elephantiasis is endemic in certain districts, and no great efforts have yet been made to search for *Filaria sanguinis hominis*.

Leprosy is one of the diseases in Egypt well worthy of study, and about which little is known. Two years ago the following list of Egyptian lepers was prepared by the provincial authorities:

Provinces of Upper Egypt.

	Men.		Women.
Esneh	14	...	2
Keneh	65	...	1
Ghirgheh	184	...	11
Siout	107	...	12
Minich and Benimazar . . .	36	...	2
Ghizeh	17	...	5
Benisouef	6	...	0
Total	429	...	33

Provinces of Lower Egypt.

	Men.		Women.
Menoufieh	184	...	31
Behera	61	...	25
Galioubieh	3	...	1
Charkieh	34	...	8
Dakalieh	46	...	21
Garbieh	103	...	22
Town of Rosetta	6	...	1
„ Damietta	6	...	0
„ Suez Canal . . .	4	...	0
Total	447	...	109

Showing an official total of 1018 lepers in all Egypt without counting those of which the Government has no knowledge.

The natives occasionally endeavour to prevent the spread of the disease by applying the actual cautery to the wrists and ankles of those in whom it has appeared in the hands and feet.

Leprosy is probably often confounded with advanced cases of syphilis, and it is treated by the American missionaries with chaulmoogra oil. They also believe in the efficacy of the sulphur springs at Helouan, near Cairo, the water of which resembles that of Aix-les-Bains. It is clear, with a slightly salt and sulphurous taste, and issues from the spring at a temperature of 110° Fahrenheit.

The following analysis of Cairo temperatures will be interesting to those who are under the impression that our summer heat is almost insupportable. It will be seen that in 1883 the highest temperature was 104°, recorded twice, viz. on May 6th and August 21st, on the former of which days there was a squall of hot wind for a few hours in the afternoon, well known to the residents as "khamseen."

In 1884 the highest temperature was 113°, on the afternoon of June 17th, when a very strong southerly "khamseen" again prevailed. The next highest temperature was 108·5°, on April 28th, again caused by a south-east wind.

Average Temperatures at Cairo.

Months.	1882.				1883.				1884.			
	Mean of maxima.	Mean of minima.	Absolute maximum.	Absolute minimum.	Mean of maxima.	Mean of minima.	Absolute maximum.	Absolute minimum.	Mean of maxima.	Mean of minima.	Absolute maximum.	Absolute minimum.
January . . .	60·6	48·5	71·6	37·4	64·5	51	80	41	59	47·4	73·5	39·2
February . . .	60	47·6	77	35·2	62·9	48·5	71·9	41	61·8	50·5	73·4	41
March . . .	69·8	55·9	93·2	40·6	73·9	57·3	99·8	38·3	72·1	55·5	91·4	43·9
April . . .	77·5	60·8	102·5	46·2	78·2	60·6	101·3	44·6	84·3	65·6	108·5	49·1
May . . .	84·2	68·1	102·5	53·7	98·9	55·7	104	52·1	83·6	67·6	104	54·5
June . . .	89	69·2	103·1	56·8	101·6	65·6	102·2	59	95·5	76·1	113	60·8
July . . .	96·2	79·8	105·8	59·9	97·1	71	102·2	62·6	90·1	72·5	98·2	66·7
August . . .	...	...	...	...	101·6	71·9	104	64·4	89·8	73·2	102·2	63·1
September . . .	...	...	...	...	100·7	67·4	103·2	60·8	82·6	70·4	92·8	61·1
October . . .	...	...	...	...	92·6	62·9	100·4	55·4	...	...	...	...
November . .	72·1	60·4	91·5	50·3	73 2	60·8	80·6	50	...	...	...	...
December . .	67·6	54·5	85·2	41·3	64·2	52·5	77	43·3	...	...	...	...

These Fahrenheit observations were taken at the Khedivial Laboratory by instruments corrected and certified in 1882 at the Paris Central Meteorological Observatory. The "mean of maxima" represents the mean of the maximum temperatures registered respectively between 7 p.m. and 7 a.m., 7 a.m. and 1 p.m., and 1 p.m. and 7 p.m. The "mean of minima" is to be understood in a similar way.

I have thought it might be interesting also to compare the maximum heat as recorded by a few observations in 1876 in the province of Darfour, in the Western Soudan, a little further south than Khartoum, with maximum temperatures taken on similar days in 1884 in Cairo and London.

By this comparison, which has no pretence to be satisfactory, it appears that at Fascher, in latitude $11\frac{1}{2}°$, the average maximum heat is nearly 11° F. cooler than at Cairo in latitude 30°.

In London, latitude $51\frac{1}{2}°$, the average maximum heat is 11° cooler than at Fascher, as judged by the observations of these twenty-five days.

Comparison between the Maximum Temperatures "Fahrenheit," as observed by the late General Purdy at Fascher (Darfour) in 1876, *with Maximum Temperatures in Cairo and London during the same period in* 1884.

	Fascher.		Cairo.	London.
	Hours of observation.	Temperature.	Maximum of the day.	Maximum of the day.
July 14	4	80·00	96·08	82·04
„ 15	4	84·50	94·82	73·04
„ 16	3	89·99	95·72	71·96
„ 17	4	80·99	95·72	69·98
„ 18	2.45	81·80	96·08	73·04
„ 19	2.45	86·43	96·98	69·08
„ 20	2	89·51	96·44	66·92
„ 21	12	87·99	96·98	69·08
„ 22	1	89·00	97·34	69·98
„ 23	1	86·50	91·04	73·04
„ 24	2.45	84·99	89·06	69·98
„ 25	10	78·51	89·06	68·00
„ 26	1	84·99	89·96	66·02
„ 27	4	76·49	91·04	62·96
„ 28	3	84·50	94·64	66·92
„ 29	2	86·00	94·64	69·98
„ 30	8	77·50	94·64	68·00
August 2	5	89·51	94·64	82·94
„ 3	11	84·00	92·84	70·88
„ 7	11	77·00	102·74	84·92
„ 8	4	87·51	100·04	89·08
„ 9	4	80·00	99·86	86·36
„ 10	12	81·80	99·86	84·74
September 5	9	77·43	90·14	65·00
„ 6	4	89·58	89·24	63·00

REPORT OF

THE OBSTETRICAL DEPARTMENT

FOR 1883.

By WILLIAM A. DUNCAN, M.D., M.R.C.P. Lond.

The Resident Accoucheurs for the year were Drs. Sutton, Savill, Caiger, and Fell.

From the 1st of January, 1883, to the 31st of December, 1883 (both dates inclusive), 1859 women were attended. Of these, 1840 resulted in single births and 19 in twins. There were 3 cases of abortion among the single births.

In the following table the presentations of the children are classified:

	Single births.		Twins.		Total.
Vertex	1782	...	29	...	1811
Breech	30	...	3	...	33
Upper extremities, including shoulder	6	...	1	...	7
Head and hand	7	...	0	...	7
Lower extremities	8	...	5	...	13
Abortions	3	...	0	..	3
Head and foot	1	...	0	...	1
Transverse	2	...	0	...	2
Funis, head, and hand	1	...	0	...	1
	1840	...	38	...	1878

Of the 1859 cases attended,

251	were 1st labours.	25	were 11th labours.
323	„ 2nd „	22	„ 12th „
273	„ 3rd „	13	„ 13th „
222	„ 4th „	5	„ 14th „
187	„ 5th „	1	was a 15th „
180	„ 6th „	4	were 16th „
129	„ 7th „	0	was a 17th „
100	„ 8th „	1	„ 18th „
74	„ 9th „	1	„ 19th „
38	„ 10th „	1849	

In 10 cases the number of confinements is not stated.

The following table shows the number of women confined at each consecutive year of life; the youngest mother being 15, and the oldest 49 years of age.

At the age of	No. of women confined.	At the age of	No. of women confined.
15 ...	1	33 ...	66
16 ...	0	34 ...	66
17 ...	2	35 ...	60
18 ...	22	36 ...	38
19 ...	57	37 ...	40
20 ...	88	38 ...	36
21 ...	90	39 ...	37
22 ...	118	40 ...	38
23 ...	146	41 ...	23
24 ...	105	42 ...	18
25 ...	97	43 ...	9
26 ...	106	44 ...	3
27 ...	105	45 ...	3
28 ...	115	46 ...	1
29 ...	99	47 ...	1
30 ...	116	48 ...	0
31 ...	59	49 ...	1
32 ...	82		1848

In 11 cases the ages of the mothers are not stated.

Forceps Cases.

The forceps were used in 65 cases. The reasons are stated below:

Delay at the brim	32	14—Contracted pelvis. 3—Inertia. 4—Faulty position of head. 6—Large head. 2—Rigidity of cervix. 1—Partial placenta prævia. 1—Exostosis of sacrum. 1—Anencephalic monster.
Lingering labours	25	
Delay of after-coming head	2	
Large size of head	5	
Strangulated femoral hernia	1	
	65	

The percentage of all the cases which required the use of the forceps was 3·5.

Of these forceps cases, 28 were primiparæ.

The percentage of all the cases *of primiparæ* requiring the use of the forceps was 11·15.

The perinæum was lacerated in 11 of the 65 forceps cases; 9 of these being in primiparæ.

11 of the children delivered by the forceps were stillborn.

In 6 of the cases the forceps were used on former occasions, and in 1 craniotomy.

The case of strangulated femoral hernia is described later on.

Cases of Version.

Podalic version was resorted to in 11 cases for the following reasons:

			No. of children stillborn.
Elbow presentation	1	...	1
Shoulder presentation	6	...	4
Shoulder and funis	2	...	2
Shoulder and hand	1	...	1
Prolapse of funis	1	...	1
	11	...	9

All the mothers recovered well. Cephalic version was had recourse to in 1 case of partial placenta prævia; the child lived, but the mother died of diphtheria a week after confinement.

Placenta prævia.

Five cases occurred during the year, the particulars of which are stated below:

No.	Age.	Confinement.	Sex.	Whether placenta prævia partial or complete.	Treatment.	Result to Mother.	Result to Child.
349	33	4th	F.	Partial	Cephalic version	Death from diphtheria 1 week after	Living.
230	34	7th	F.	„	Dilatation with Barnes' bags, and podalic version	Recovery	„
602	23	3rd	F.	„	Podalic version	„	„
258	32	7th	F.	„	„	„	Stillborn.
508	28	7th	M.	„	„	„	Living.

Breech Presentations.

The breech presented in 33 cases (3 of which were twins). This gives a proportion of 1 in every 56 labours.

Of the 30 single births 18 were males (of which 6 were living and 12 stillborn), 15 were females (of which 4 were living and 11 stillborn).

The percentage of stillborn children in the single breech cases being nearly 77.

Maternal Deaths.

Six maternal deaths occurred during the year, or ·325 per cent.

The following table gives an outline of the cases. They are more fully given at the end of this report.

No.	Age.	Confinement.	Sex.	Result to child.	Causes of death.	Date of confinement.	Date of death.
349	33	4th	F.	L.	Partial placenta prævia; cephalic version; diphtheria	March 19	March 26
2879	29	5th	M.	L.	Phthisis	April 5	April 13
2926	29	1st	F.	—	Septicæmia	April 28	May 10
368	29	2nd	M.	S.	Septicæmia	June 26	July 7
470	31	2nd	M.	S.	Septicæmia	June 28	June 28
1182	38	12th	F.	L.	Adherent placenta; septicæmia; pneumonia	Oct. 28	Nov. 8

Of the Children.—The number of births among the 1859 women attended during the year was 1878; there being 19 cases of twins. Of these, 987 were males and 889 were females; the sex of 2 of the children is not stated.

Among these there were 85 cases of stillbirths, being in the proportion of 1 stillbirth in 22 cases, or 4·526 per cent.

The following are the characters of the labours in which they occurred:

	Sex. M.	Sex. F.	Total.
Natural	20	12	32
Abortions	3	0	3
Premature births	8	5	13
Upper extremities, including shoulder	3	2	5
Lower extremities	1	2	3
Breech	8	7	15
Placenta prævia	2	0	2
Uncomplicated forceps cases	4	3	7
Head and foot	0	1	1
Transverse	1	1	2
Funis, head, and hand	1	0	1
Craniotomy	1	0	1
	52	33	85

Besides the stillbirths 38 children are reported as dying during the first week of their life.

Twin Births.

The following table gives particulars of the 19 cases:

No.	Age.	Confinement.	Date of birth.	Sex.		Result to mother.	Result to child.		Presentations.		Condition of placenta.
				1st.	2nd.		1st.	2nd.	1st.	2nd.	
97	23	4	Jan. 15	F.	F.	R.	L.	L.	Cranial	Cranial	Single
165	26	1	Feb. 8	F.	F.	R.	L.	L.	Breech	Breech	Separate
96	29	2	Feb. 28	M.	F.	R.	L.	L.	Cranial	Cranial	Single
2055	37	7	March 11	F.	F.	R.	L.	L.	,,	Foot	,,
682	37	9	April 16	M.	F.	R.	L.	L.	Shoulder	Breech	,,
604	30	4	April 13	M.	F.	R.	L.	L.	Cranial	Cranial	,,
369	19	1	May 24	F.	F.	R.	L.	L.	,,	,,	,,
966	32	7	May 30	M.	M.	R.	L.	L.	Hand and head	,,	,,
476	28	2	June 15	M.	F.	R.	D.	L.	Transverse	,,	Separate
1365	23	2	July 25	F.	M.	R.	L.	L.	Cranial	Shoulder	Single
829	32	2	Aug. 15	F.	F.	R.	D.	D.	,,	Cranial	,,
1487	34	7	Aug. 29	F.	F.	R.	D.	D.	Not stated, premature	Not stated, premature	—
1033	30	4	Sept. 15	M.	M.	R.	L.	L.	Cranial	Feet	Single
1373	34	10	Sept. 23	M.	F.	R.	L.	L.	,,	Breech	,,
1367	30	6	Oct. 22	F.	F.	R.	L.	L.	,,	,,	,,
1917	22	1	Nov. 7	F.	F.	R.	L.	L.	,,	Cranial	,,
1544	33	5	Nov. 23	F.	F.	R.	L.	L.	,,	,,	Separate
1753	24	4	Nov. 28	M.	M.	R.	L.	L.	,,	,,	Single
1540	25	2	Dec. 3	M.	M.	R.	L.	L.	,,	,,	,,

The placentæ of the twin births were separate in 3 cases and single in 15; not stated in 1.

The twin children were—

In 4 cases, both males;
,, 9 ,, ,, females;
,, 6 ,, male and female.

Malformations.

No.	Sex.	
1884	F.	Spina bifida and talipes varus.
1871	M.	6 fingers on each hand, 2 nails on little toes, toes webbed.
1612	M.	Harelip and cleft palate.
1674	F.	Talipes valgus (left), talipes varus (right).
963	F.	Anencephalic monster.
1076	M.	Harelip and cleft palate.
700	M.	Middle toe on left foot wanting, 1st and 2nd toes on right foot webbed.
423	M.	Hypospadias.
323	F.	Lobule of left ear, bifid.

Parturition complicated by Strangulated Hernia; recovery.

Mrs. T—, æt. 24. When at full term in her 3rd pregnancy began to have labour pains on the morning of February 25th. The obstetric clerk found on arrival that the patient had been sick several times, and that she had a femoral hernia on the left side, which he could not reduce, so sent for the resident accoucheur, who also tried taxis and failed. Dr. Duncan was then called in, and on finding the patient had a tense and rather tender hernia about the size of a fist, he had her at once removed to the hospital. The os uteri was about the size of a florin. The patient was placed under ether and taxis again tried, but without success. It was then decided to complete delivery before proceeding further with the hernia. The resident accoucheur dilated the os fully with Barnes' bags, then applied the forceps above the brim and promptly effected delivery; the placenta speedily followed. The patient being kept fully under ether, taxis was now once more tried, and the hernia was easily and completely reduced.

The patient made a good recovery.

Maternal Deaths.

1. "*Partial placenta prævia; cephalic version; diphtheria.*"

No. 349. Mrs. P—, æt. 33. Fourth confinement. Partial placenta prævia. Was confined on March 19th, after cephalic version had been performed. The hæmorrhage before delivery was not severe. Placenta expelled soon after child. As this woman lived out of the district a local medical man was called in. She is reported to have died, on March 26th, of diphtheria.

2. "*Forceps delivery; ruptured perinæum; septicæmia.*"

No. 2926. Mrs. E—, æt. 29. First confinement. Labour lingering. Was delivered of a living female child on April 28th. Forceps used by resident accoucheur, and perinæum ruptured to sphincter ani. It was at once sutured.

April 29th.—Temp. 101·6°. Vagina syringed with Condy's fluid, and a large clot of blood came away.

30th.—Temp. 103·9, pulse 115. Lochia offensive; tenderness over lower abdomen; uterus big. Perinæum sloughy. Injections of Condy.

May 1st.—Temp. 104·3°. Restless; abdomen still tender. Sutures removed.

2nd.—Temp. 103·3°. Bowels opened by castor oil; 1 grain opium pill given three times a day. Patient rather delirious. She gradually got worse; pneumonia set in on the 5th, and death occurred on the tenth day after delivery.

3. "*Adherent placenta; femoral thrombosis; pneumonia.*"

No. 368. Mrs. G—, æt. 29. Second confinement. Was delivered of a still-born child on June 26th. Labour easy; child had evidently been dead some days, as putrefactive change had set in. Placenta was adherent, and had to be separated with the fingers, after which the uterine cavity was well syringed out with a solution of Condy. The patient had previously been confined in a lunatic

asylum (having attempted suicide whilst temporarily insane). Three days after delivery symptoms of mental derangement, characterised by incessant chatterings and insomnia with illusions, set in.

Ordered a draught containing chloral hydrate, 30 grains, and bromide of potassium, 30 grains.

June 30th.—Temp. 101°, pulse 110. Tongue furred; patient complains of acute abdominal tenderness and pain; lochia offensive.

Ordered—

℞ Quiniæ Sulph. gr. iij, 4tis horis,
Mist. Potass. Citratis efferves. ℥j, ter indie.
Injections of Condy's fluid night and morning.

This state was maintained in an exaggerated degree for the next week.

Ordered: Acid. Salicylic. gr. 20, 4tis horis, with opium and salines; stimulants increased. Diet.—Milk and strong beef tea.

On the 9th day patient became unconscious, and remained so till her death.

On the 10th day phlebitis of the right iliac and femoral veins was noticed. Glycerine and belladonna applied to the leg; poultices to abdomen, and brandy ordered every two hours.

On 11th day respirations became more frequent and shallow; tubular breathings over right base and over a patch in left apex. Temp. rose to 105°. Ordered nutrient enemata every four hours.

On 12th day temp. rose to 106°, coma deepened, and death took place in the afternoon.

4. "*Septicæmia.*"

No. 470. Mrs. W—, æt. 31. Sent to the hospital on June 28. On the clerk's arrival he found that she had been "very ill" for a week previous, and had had for ten days a very offensive discharge. Her present condition was one of great exhaustion. Pulse 120. Tongue furred. Respirations shallow and frequent. There had been some rigors, and patient complained of great pain in the abdomen. A stillborn male child was expelled easily a few hours later, leaving the mother collapsed and delirious. Stimulants were freely given. Half an hour after the clerk left, a message was sent saying the patient was dead. The resident accoucheur at once went down and found such was the case. Death was said to have taken place quietly. The child was in a state of putrefaction, with the epidermis separated.

5. "*Adherent placenta; septicæmia.*"

No. 1182. Mrs. E—, æt. 38. Twelfth confinement. Was delivered of a healthy female child before the arrival of the obstetric clerk. The midwife had made traction on the cord, until she tore it off, bringing with it a small fragment of placenta. The resident accoucheur having been sent for found that very considerable hæmorrhage had taken place, and the bedding was soaked for a wide area. With much difficulty the placenta (which was everywhere adherent) was peeled off. Two drachms of ergot were then given, and the uterus firmly compressed, a little blood with some air bubbles being squeezed out; after this there was no more hæmorrhage, but the woman was blanched and much exhausted, so it was considered advisable to do no more than give her a little ammonia and get her warm in bed as soon as possible.

Oct. 29th.—Except for some abdominal pains seems doing well.

30th.—Temp. 105, pulse 140. Abdomen slightly tender, lochia slight in amount and offensive; tongue moist; no vomiting; some shivering. Uterus syringed daily from this time with carbolised water. Ordered—

℞ Quiniæ gr. v, bis indie.

Milk and beef tea.

31st.—Seems slightly better.

Nov. 1st.—Temp. still high; no change.

2nd.—Temp. 104·8°, pulse 130, small, respirations 38 per minute, shallow and panting. Pain in chest, cough and expectoration. Abdomen lax and not tender. Diarrhœa six times last night; slight delirium; excessive pallor; tongue dry and furred. Ordered—

℞ Quiniæ gr. x, nocte maneque.

Tinct. Ferri Perchlor. ʒss 6tis horis.

3rd.—Temp. 104·6°, pulse 136, resp. 48. Expectoration pneumonic; tubular breathing at root of right lung; complains much of thirst.

4th.—Temp. 102·4°, resp. 54, pulse 136. Delirious; pulse small and dicrotous; offensive smell in spite of syringing. P.M. Temp. has fallen to 101·8°, but there is no real improvement; pulse 140, resp. 60.

5th. A.M.—Temp. 105·2°, pulse 140, resp. 66. Ordered Warburg's tincture ʒj ter indie. P.M. continues the same.

6th. A.M.—Seems better. Temp. 99·8°, pulse 100, resp. 42. No delirium, but excessive weakness. P.M. Worse again. Had a bad rigor in the afternoon, lasting 20 minutes; carphology; motions and urine passed unconsciously. Temp. 104°, pulse 140, resp. 72. Ordered—brandy ʒvj.

7th.—Temp., pulse, and respirations the same. Too ill to be moved to have back examined or to be syringed.

8th. A.M.—Has been lying motionless since yesterday, not taking her medicine because friends thought her dying. Cannot speak audibly; is quite conscious. Ordered—Brandy ʒij every hour; Warburg's tincture ʒss every three hours; milk or beef tea every 15 minutes. P.M. Rallied a little about eight o'clock; spoke audibly and sensibly; died an hour later.

"Phthisis."

No. 2879. Mrs. K—, æt. 29. When in labour with her 5th child sent to the hospital on April 5th. The obstetric clerk found the patient a very emaciated woman, who was said to have been ill for months with consumption. The os was undilated and the pains feeble and irregular, so he left. Not having been again sent for, he called the next morning and found the condition unaltered, so he sent for the resident accoucheur, who dilated the os uteri by hot water douche; he then applied the long forceps above the brim of the pelvis, and delivered a very thin and small living male child. The patient continued very exhausted, and gradually sank of phthisis on April 13th.

Case of Craniotomy.

No. 2882. Mrs. C—, æt. 45. In labour at ful term with her 2nd child on January 4th. As no progress was made after the os uteri had been fully dilated

for some time, the resident accoucheur was sent for. He found the patient a short, rickety woman, with a conjugate diameter of three inches. Having administered chloroform, he applied the long forceps, but without being able to effect delivery.

Dr. Duncan was then called in, and on arrival re-applied the forceps, with a like result; he then performed craniotomy in the usual manner. After evacuation of the cranial contents, delivery was easily accomplished by means of the craniotomy forceps.

The patient made a good recovery. In her first confinement a similar operation had to be undertaken, and she was then warned, in the event of pregnancy again occurring, that labour should be brought on at end of seventh month.

MEDICAL REPORT.

1883.

By WALTER BAUGH HADDEN, M.D. Lond., M.R.C.P.,
MEDICAL REGISTRAR.

Table I.—*General Statement of Medical and Surgical Patients.*

	Males.	Females.	Total.
Number of patients in Hospital, Jan. 1st, 1883 ...	191	183	374
„ „ „ Dec. 31st, 1883 ...	174	192	386

„ „ discharged or died during 1883:

	Males.	Females.	Total.	Rate per cent.
Cured	1424	1092	2516	56·76
Relieved	550	587	1137	25·65
Unrelieved or other causes ...	132	157	289	6·52
Died	302	188	490	11·05
	2408	2024	4432	100·

Average number of days of each medical patient's stay in hospital—29·45.
„ „ surgical „ 30·9.

Table II.—*General Medical Statement.*

Number of Medical Beds 192

	Males.	Females.	Total.
Number of patients in Medical Wards, Jan. 1st, 1883 ...	72	81	153
„ „ admitted during the year 1883 ...	875	1012	1887
Total	947	1093	2040
„ „ in Medical Wards, Dec. 31st, 1883...	69	94	163
„ „ treated to a termination during 1883	878	999	1877

„ „ discharged or died during 1883:

	Males.	Females.	Total.	Rate per cent.
Cured	363	436	799	42·56
Relieved	226	307	533	28·39
Unrelieved or other causes ...	102	130	232	12·36
Died	187	126	313	16·67
Total	878	999	1877	100·

Average number of days of each patient's stay in hospital—29·45.

Table III.—*General Table of Diseases.*

DISEASE.	Number of cases.			Age.							Duration of residence.								Cured.		Relieved.		Unrelieved.		Died.		REMARKS.
	Total.	M.	F.	Under 5	5–10	–20	–30	–40	–50	–60	Above 60	Under 1 week	Wks. 1–2	Wks. 2–4	Mts. 1–2	Mts. 2–4	Mts. 4–6	Mts. 6–9	Mts. 9–12	Above 1 year	M.	F.	M.	F.	M.	F.	M.	F.	
I. General Diseases.																												
Rötheln	4	1	3	1	...	...	3	...	...	...	...	1	2	1	...	...	...	...	...	...	1	3	...	...	...	...	...	...	2 arose in hospital. Of the other two, 1 was a student, and 1 contracted measles during convalescence.
Measles	9	5	4	5	1	1	1	1	...	...	...	...	4	4	1	...	...	...	...	...	5	4	...	...	...	...	...	...	5 arose in hospital.
Variola	1	...	1	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	Sent to Stockwell Hospital.
Varicella	2	2	...	1	1	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	2	...	...	...	...	...	...	...	Both arose in hospital.
Scarlet fever	23	14	9	2	3	5	10	2	1	...	...	...	5	2	11	5	...	...	...	...	12	9	1	...	...	...	1	...	1 arose in hospital; 2, both nurses, were doubtful; 1 re-admission. Nothing definite found P.M. in fatal case.
Typhus fever	10	4	6	1	1	5	2	...	1	...	...	...	...	6	4	...	...	...	...	...	4	6	...	...	...	...	...	...	1 arose in hospital; 3 were doubtful.
Enteric fever	83	51	32	3	11	37	23	7	1	1	...	4	5	15	44	13	2	...	...	...	45	29	...	...	3	...	3	3	2 arose in hospital, 1 being a ward-maid. None of the cases were fatal from perforation.
Cerebro-spinal meningitis	1	1	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	
Febricula	16	9	7	...	4	8	3	...	1	...	...	2	5	8	1	...	...	...	...	...	9	7	...	...	...	...	...	...	Suspicion of enteric in 5, one being a readmission.
Erysipelas	22	10	12	...	...	7	5	3	3	1	3	3	9	8	1	1	...	...	...	...	8	9	1	...	1	...	...	3	Facial in 19. 1, a fatal case, arose in hospital. Early renal disease in 2 fatal cases.
Pyæmia	2	...	2	...	...	...	1	1	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	1	1 transferred to surgical ward, where she died. In fatal case the probable starting-point was disease of phalanx of left index finger.

Diphtheria	32	11	21	18	8	4	1	1	...	...	...	12	7	8	3	2	...	...	...	...	7	9	...	...	...	...	4	12	1 non-fatal case, a nurse, arose in hospital; 1 was fatal from cardiac paralysis.
Post-diphtheritic paralysis	1	1	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	Paraplegia, paralysis of soft palate, weakness of external recti, anæsthesia, and convulsive movements.
Pertussis	4	...	4	2	1	1	...	...	...	...	...	2	1	1	...	...	...	...	...	...	2	...	1	...	1	...	...	1 arose in hospital.
Parotitis	1	...	1	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	
Syphilis	3	...	3	...	...	1	1	1	...	...	...	...	...	...	1	2	...	...	...	...	1	...	2	...	...	...	...	Gumma of liver in 1, a congenital case.
Ague	3	3	...	...	...	...	...	2	...	1	...	...	3	...	...	...	...	...	...	...	1	...	2	...	...	...	...	1 doubtful; dysentery in 1.
Acute rheumatism	116	57	59	...	3	40	47	19	5	2	...	3	28	53	28	4	...	...	...	...	56	56	...	...	1	2	...	1	5 readmissions. No P.M. in fatal case.
Subacute rheumatism	15	6	9	...	...	3	3	6	2	...	1	1	5	9	...	...	...	...	...	...	6	9	...	...	...	...	...	...	1 transferred from surgical ward.
Chronic articular rheumatism	20	8	12	...	...	...	3	6	4	3	4	...	3	3	10	4	...	...	...	...	2	3	4	8	2	1	...	...	1 had been in the hospital this year for acute rheumatism.
Muscular rheumatism	6	5	1	...	...	3	2	1	...	...	...	1	2	3	...	...	...	...	...	...	4	1	1	...	...	...	...	...	2 were cases of lumbago.
Rheumatic pains	4	1	3	...	...	2	...	1	...	...	1	1	1	1	...	1	...	...	...	...	1	2	...	1	...	...	...	...	Genu valgum in 1; miscarriage a week previously in 1.
Gonorrhœal rheumatism	2	2	...	...	...	1	...	1	...	...	...	...	...	1	...	1	...	...	...	...	1	...	...	...	1	...	...	...	1 had had a previous attack; 1 was doubtful.
Synovitis	2	...	2	...	...	2	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	1	...	1	...	...	...	...	Left wrist affected in 1, possibly gonorrhœal; left knee in 1.
Gout	15	13	2	...	...	...	1	5	5	2	2	3	2	4	6	...	...	...	...	...	2	2	9	...	1	...	1	...	1 readmission; 1 case doubtful. In fatal case, a male, æt. 21, there was chronic renal disease, for which he had been under treatment in the hospital this year. 3 were painters.
Myxœdema	3	...	3	...	...	...	...	1	1	1	...	...	1	1	1	...	...	...	...	...	...	...	...	3	...	...	...	...	Glycosuria in 1; phthisis in 1.
Diabetes	7	7	...	...	...	...	1	2	3	1	...	...	1	...	...	2	2	1	1	...	...	...	2	...	1	...	4	...	
Scorbutus	1	1	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	Contracted on land.

TABLE III—*continued.*

DISEASE.	Number of cases.			Age.								Duration of residence.									Cured.		Relieved.		Unrelieved.		Died.		REMARKS.
	Total.	M.	F.	Under 5	5–10	–20	–30	–40	–50	–60	Above 60	Under 1 week	Wks. 1–2	Wks. 2–4	Mts. 1–2	Mts. 2–4	Mts. 4–6	Mts. 6–9	Mts. 9–12	Above 1 year	M.	F.	M.	F.	M.	F.	M.	F.	
I. GENERAL DISEASES—*continued.*																													
Purpura	8	2	6	3	5	...	...	...	...	...	...	5	2	1	...	...	...	...	...	...	1	1	...	1	...	...	1	4	1 readmission, a fatal case; miliary tubercles in lungs in 1. No P.M. in 1.
Hæmophilia	1	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	
Pernicious anæmia	4	3	1	...	...	...	...	1	2	1	...	1	..	1	1	1	...	...	...	...	...	...	2	...	1	...	...	1	1 case, a readmission, doubtful. Hæmorrhage in various parts in fatal case.
Anæmia	18	1	17	...	...	9	8	...	...	...	1	...	3	9	6	...	...	...	...	...	1	11	...	6	...	...	...	...	
Lymphadenoma	2	2	...	...	...	...	1	1	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	1	...	1	...	No P.M. in fatal case.
General tuberculosis	6	4	2	1	3	1	...	1	...	...	...	...	3	1	2	...	...	...	...	...	...	...	...	...	...	...	4	2	
General carcinoma	1	1	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	The growth was encephaloid.
Rickets	2	1	1	1	1	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	1	1	...	...	...	...	...	...	Tetany and impetigo in 1.
II. DISEASES OF THE SKIN																													
Erythema	1	...	1	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	Left leg and foot affected.
Erythema nodosum	2	...	2	...	...	...	1	1	...	...	...	...	...	2	...	...	...	...	...	...	...	2	...	...	...	...	...	...	Acute rheumatism supervened in both cases.
Herpes zoster	1	...	1	...	..	...	..	...	...	1	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	In the course of the left upper intercostal nerves.
Eczema	4	2	2	1	...	...	1	...	1	1	...	...	...	2	2	...	...	...	...	...	2	1	...	1	...	...	...	...	In 2 the eruption was general; in 1 limited to the head, and in 1 to the face.
Impetigo	1	1	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	
Psoriasis	1	1	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	Eruption general.
Lupus erythematosus	1	1	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	Eruption on face, chest, and back.
Universal alopecia	1	...	1	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	Associated with symptoms of nerve disorder.

III. Diseases of the Respiratory Organs.																															
Acute laryngitis	7	3	4	2	...	...	4	1	...	...	...	...	3	3	...	1	...	...	...	...	3	4	...	...	...	...	...	...			Tracheotomy in 1; temporary paralysis of adductors in 1.
Syphilitic disease of larynx	3	..	3	...	...	...	...	3	...	...	...	1	1	...	.	1	...	...	.	...	...	...	3	.	..	.	...				Subglottic laryngitis in 1; immobility of left vocal cord in 1; swelling of ventricular bands in 1.
Sarcoma of larynx	1	1	...	..	...	...	...	...	...	1	...	...	...	...	1	.	...	...	...	...	...	...	...	...	...	1	...				Sarcoma of base of epiglottis and tongue, with phthisis.
Papilloma of larynx	1	...	1	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1				Warty growth involving both vocal cords.
Abscess of larynx	2	1	1	...	...	...	...	...	1	...	1	1	...	...	1	...	...	...	...	...	...	...	...	1	...	...	1	...			Abscess of rima, double pleurisy and pericarditis in fatal case.
Œdema of glottis	1	...	1	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...				
Perichondritis	1	...	1	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...				Exacerbation of chronic perichondritis of left arytænoid.
Necrosis of right arytænoid	1	...	1	1	...	...	...	...	...	...	...	1	..	...	...	...	...	...	...	...	...	...	...	...	...	...	1				Œdema of glottis and bronchitis.
Paralysis of abductors	2	1	1	...	...	...	...	1	..	1	...	...	1	...	...	1	...	...	...	...	...	...	1	1	...	...	...				Acute congestion of vocal cords and paresis of right abductor in 1; 1 probably syphilitic.
Gumma of trachea	1	...	1	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...				Rapid improvement under mercury and iodide of potassium.
Acute bronchitis.	14	5	9	7	2	...	1	3	...	1	...	2	1	9	1	1	...	...	...	...	5	8	...	...	...	...	...	1			Due to whooping-cough in 3. Pulmonary collapse and lateral curvature of spine in fatal case.
Subacute and chronic bronchitis	30	14	16	...	1	...	3	5	5	8	8	4	6	12	6	2	...	...	...	...	1	6	8	8	1	...	4	2			Pneumonic patches in 2 fatal cases; early renal disease in 1; psoriasis in 1.
Broncho-pneumonia	6	5	1	5	1	...	...	...	..	...	...	3	1	2	...	...	...	...	...	...	2	1	...	...	...	...	3	...			
Acute pneumonia	75	51	24	10	6	14	12	15	12	3	3	15	14	28	15	3	...	...	...	...	36	19	1	1	...	...	14	4			
Phthisis	100	51	49	3	2	8	35	25	15	9	3	11	18	37	22	10	2	...	...	...	...	...	24	20	7	12	20	17			1 readmission.

Table III—*continued.*

DISEASE.	Number of cases.			Age.								Duration of residence.									Cured.		Relieved.		Unrelieved.		Died.		REMARKS.
	Total.	M.	F.	Under 5	5–10	–20	–30	–40	–50	–60	Above 60	Under 1 week	Wks. 1–2	Wks. 2–4	Mts. 1–2	Mts. 2–4	Mts. 4–6	Mts. 6–9	Mts. 9–12	Above 1 year	M.	F.	M.	F.	M.	F.	M.	F.	
III. Diseases of the Respiratory Organs —*continued.*																													
Hæmoptysis . .	4	2	2	...	...	...	1	3	...	...	...	...	1	1	1	1	...	...	...	...	...	...	2	2	...	...	...	...	Probably connected with phthisis in all.
Pneumothorax . .	3	3	...	...	...	...	3	...	...	...	...	...	...	1	1	1	...	...	...	...	...	...	2	...	1	...	...	...	1 readmission; 1 due to injury; 1 to phthisis.
Pleurisy . . .	41	31	10	3	2	3	14	12	3	3	1	4	4	15	15	2	1	...	...	...	19	7	8	2	...	...	4	1	2 readmissions; 1 subsequently died of tubercular meningitis (q. v.).
Empyema . . .	11	9	2	2	3	1	1	4	...	...	...	3	...	2	1	3	2	...	...	...	5	...	1	...	...	...	3	2	7 on the left, 4 on the right side; 1 readmission.
Intra-thoracic tumour	5	4	1	...	...	...	...	...	4	1	...	...	1	...	2	2	...	...	...	...	...	..	3	1	...	...	1	...	Carcinoma of glands between œsophagus and trachea in fatal case.
Congestion of lungs .	2	1	1	...	...	1	...	...	...	1	...	1	...	...	1	...	...	...	...	...	1	...	...	1	...	...	...	...	
Asthma . . .	1	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	Associated with emphysema.
Dyspnœa . . .	1	1	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	No obvious cause.
IV. Diseases of the Organs of Circulation.																													
Pericarditis . .	3	2	1	1	...	1	...	1	...	...	...	1	...	...	2	...	...	...	...	...	...	...	1	...	...	...	1	1	...	No P.M. in fatal case. 1 subsequently died of adherent pericardium (q. v.).
Adherent pericardium	3	2	1	...	1	1	1	...	...	...	..	1	...	2	...	...	...	...	...	...	...	...	...	1	...	...	2	...	In 1 previously under treatment for acute pericarditis (q. v.) there was pulmonary

																													apoplexy and chronic congestion of organs. In the other fatal case there was double tubercular pleurisy.
Anginoid . . .	1	1	...	...	...	...	..	1	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	
1. *Heart.*																													
Hypertrophy . .	1	1	...	...	...	...	..	..	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	.	..	1	...	Atheroma of aorta, congestion of kidneys, with slight interstitial change.
Malformation . .	3	2	1	1	.	2	...	..	...	...	...	...	...	1	2	..		...	...	...	...	...	2	1	...	...	...	...	
2. *Valvular disease.*																													
Mitral . . .	48	16	32	...	2	11	15	8	9	1	2	...	12	16	16	3	1	...	...	...	...	...	9	25	1	3	6	4	5 readmissions.
Aortic . . .	18	12	6	...	...	...	2	5	8	2	1	1	1	6	8	2	...	...	...	...	...	...	4	2	1	2	7	2	1 readmission. Suspicion of aneurysm in 2.
Mitral and aortic .	34	15	19	...	1	4	11	8	3	5	2	9	3	9	9	3	1	...	...	...	...	...	5	7	...	4	10	8	Suspicion of aneurysm in 1.
3. *Vessels.*																													
Thoracic aneurysm .	17	13	4	...	...	...	...	2	11	3	1	...	2	3	7	5	...	...	...	...	...	...	6	1	4	2	3	1	2 readmissions. 1 was probably a dissecting aneurysm.
Abdominal aneurysm .	4	4	...	...	...	...	1	2	1	...	...	...	1	...	...	3	...	...	...	...	...	...	2	...	...	...	2	...	In 1 fatal case there was an old popliteal aneurysm.
Phlebitis . . .	3	1	2	...	...	1	1	...	1	...	...	...	1	1	...	1	...	...	...	...	1	1	...	1	...	...	...	...	Veins of lower limbs affected in all.
Thrombosis of portal vein	1	...	1	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	Hæmatemesis the chief symptom.
V. Diseases of the Ductless Glands.																													
Goitre . . .	3	1	2	...	...	1	..	1	...	1	...	2	...	1	...	...	...	...	...	...	...	...	...	2	1	...	...	...	1 transferred to surgical ward, where the isthmus was excised, the tumour subsequently disappearing. In 1 a cyst was tapped.
Addison's disease .	3	1	2	...	...	...	...	2	1	...	...	1	...	1	1	...	...	...	...	...	...	...	1	1	...	...	...	1	Typical change in suprarenals in fatal case.
Enlarged spleen . .	1	...	1	...	...	1	...	...	...	...	...	...	..	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	Associated with slight jaundice.

TABLE III—*continued.*

DISEASE.	Number of cases.			Age.								Duration of residence.								Cured.		Relieved.		Unrelieved.		Died.		REMARKS.
	Total.	M.	F.	Under 5	5–10	–20	–30	–40	–50	–60	Above 60	Under 1 week	Wks. 1–2	Wks. 2–4	Mts. 1–2	Mts. 2–4	Mts. 4–6	Mts. 6–9	Mts. 9–12	Above 1 year	M.	F.	M.	F.	M.	F.	M.	F.	
VI. DISEASES OF THE DIGESTIVE ORGANS.																												
1. *Alimentary canal.*																												
Stomatitis . . .	4	3	1	1	2	...	1	...	...	...	...	...	3	1	...	...	...	...	...	...	2	1	1	...	...	...	...	...	
Tonsillitis . . .	26	12	14	4	3	7	8	2	2	...	...	11	11	3	1	...	...	...	...	...	12	14	...	...	...	...	...	...	Thrombosis of saphena vein in 1; bronchitis 2; mitral regurgitation in 1.
Stricture of œsophagus	5	4	1	...	...	...	...	...	1	2	2	1	1	...	1	2	...	...	...	...	...	...	1	1	1	...	2	...	All the cases probably due to malignant disease.
Dyspepsia . . .	15	4	11	...	...	2	3	2	1	4	3	3	5	4	3	...	...	...	...	...	4	5	...	4	...	2	...	...	
Gastric ulcer . .	16	3	13	...	...	...	6	6	3	1	...	...	2	4	6	3	1	...	...	...	2	4	1	7	...	2	...	...	
Hæmatemesis . .	4	1	3	...	...	...	2	...	1	1	...	1	...	1	1	1	...	...	...	...	...	2	...	1	1	...	...	...	1 probably due to alcoholism.
Vomiting . . .	3	...	3	...	1	...	1	...	1	...	...	1	1	...	1	...	...	...	...	...	...	3	...	...	...	...	...	...	All of doubtful nature.
Acute gastritis . .	2	2	...	1	...	...	...	...	1	...	...	1	...	1	...	...	...	...	...	...	...	...	1	...	...	...	1	...	Mucous membrane of stomach coated with mucus in fatal case.
Carcinoma of stomach	11	8	3	...	...	...	...	2	4	4	1	1	2	3	3	2	...	...	...	...	...	...	3	...	2	1	3	2	
Diarrhœa . . .	17	7	10	8	...	2	3	2	...	2	...	6	4	4	3	...	...	...	...	...	6	6	...	2	...	1	1	1	1 examined post-mortem, but no obvious abnormal appearances. 1 contracted erysipelas and died; there was ulceration of the small intestine found P.M.
Enteritis . . .	6	2	4	2	...	...	3	1	...	...	...	4	1	...	...	...	...	...	1	...	...	2	...	...	1	...	1	2	In 2 fatal cases, both children, there was catarrh of large intestine. In the other fatal case acute enteritis and peritonitis, and ulcerative

																													endocarditis found P.M. 1 transferred to surgical ward, where he died after abdominal section.
Dysentery	6	5	1	...	...	1	2	2	1	...	...	...	1	3	2	...	...	...	...	...	3	...	1	1	...	...	1	...	Extensive ulceration of colon and acute peritonitis, but no perforation, in fatal case.
Colic	4	3	1	...	...	...	1	1	1	...	1	...	1	2	1	...	...	...	...	...	3	...	...	1	...	...	...	...	1 probably due to lead.
Constipation	12	5	7	...	...	4	3	2	...	2	1	7	1	4	...	...	...	...	...	...	5	6	...	...	...	1	...	...	Parametritis in 1, unrelieved.
Intestinal obstruction	9	4	5	2	...	1	3	...	...	2	1	1	...	5	2	1	...	...	...	...	1	1	...	2	1	1	2	1	1 readmission.
Perityphlitis	5	5	...	...	...	2	2	...	...	1	...	...	1	3	1	...	...	...	...	...	4	...	1	...	...	...	...	...	
Tubercular ulceration of intestine	1	1	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	Tubercular ulceration of small intestine; tubercle of abdominal and bronchial glands, liver, spleen, lungs, and pleura.
Perforation of vermiform appendix	1	...	1	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	Acute peritonitis, pleurisy, and pericarditis.
2. *Peritoneum.*																													
Acute peritonitis	3	2	1	...	...	...	2	1	...	...	...	...	1	2	...	...	...	...	...	...	2	...	...	...	...	...	...	1	Acute peritonitis and enteritis in fatal case.
Chronic peritonitis	20	14	6	2	6	5	3	1	...	...	3	1	...	8	8	3	...	...	...	...	...	...	7	5	2	...	5	1	1 readmission. All probably tubercular.
Carcinoma of peritoneum	1	...	1	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	Carcinoma of peritoneum, left mamma, and lung.
Ascites	1	...	1	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	Cause doubtful.
3. *Liver.*																													
Cirrhosis	17	11	6	...	...	1	1	1	9	4	1	2	2	3	6	3	1	...	...	...	...	...	6	1	...	4	5	1	1 readmission, a doubtful case of hypertrophic cirrhosis. Tuberculosis in 2; peritonitis in 2.
Abscess	1	1	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	Opened into air-passages.
Acute hepatitis	1	1	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	A doubtful case.
Hydatid	2	1	1	...	...	...	1	1	...	...	...	...	1	1	...	...	...	...	...	...	...	1	...	...	1	...	...	...	

Table III—*continued.*

DISEASE.	Number of cases.			Age.								Duration of residence.								Cured.		Relieved.		Unrelieved.		Died.		REMARKS.
	Total.	M.	F.	Under 5	5–10	–20	–30	–40	–50	–60	Above 60	Under 1 week	Wks. 1–2	Wks. 2–4	Mts. 1–2	Mts. 2–4	Mts. 4–6	Mts. 6–9	Mts 9–12	Above 1 year	M.	F.	M.	F.	M.	F.	M.	F.	
VI. Diseases of the Digestive Organs —*continued*																												
Cancer . .	6	3	3	...	...	...	...	...	3	1	2	...	...	2	4	...	...	...	...	...	...	...	...	...	1	3	2	1, not fatal, probably malignant growth of gall-bladder; 2 were cases of malignant growth of gall-bladder and liver, with gall-stones; 1 a case of primary scirrhus. In the two others there were numerous growths elsewhere.
Biliary colic . .	2	...	2	...	...	...	...	...	2	...	...	1	...	...	...	1	...	...	...	...	...	2	...	...	...	...	...	...	No jaundice in either case. Uterine fibroid in 1.
Obstructive jaundice .	17	4	13	...	...	1	7	1	...	5	3	2	4	6	3	1	1	...	...	..	3	7	1	1	...	4	...	1	7 probably catarrhal; 6 due to gall-stones; 1 to malignant disease; 2 doubtful. In the fatal case the obstruction depended on a partially healed duodenal ulcer.
4. *Various.*																													
Malignant of pancreas	2	1	1	...	...	...	...	...	...	2	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	1	1	In male malignant of pancreas and glands in the neighbourhood, and of bronchial glands; in female scirrhus of pancreas and obstruction of common bile duct.
Abdominal tumour .	11	3	8	...	...	...	2	...	2	3	4	2	2	2	2	3	...	...	...	...	...	...	1	2	1	3	1	3	1 readmission. No P.M. in 1.

„ abscess	1		1				1											1					1							Probably tubercular. Patient had phthisis.
„ hydatid	1	1					1							1						1										Paracentesis performed.
Tænia solium	1	1							1			1										1								
VII. Diseases of the Genito-urinary System.																														
Acute nephritis	18	13	5	3	2	5	2	1	5			1	4	3	9	1				7	3	4	1	1	1	1				7 were post-scarlatinal; 1 occurred after delivery, and 1 during pregnancy. In the fatal case the kidneys were large, the cortex red, swollen, and homogeneous, and there was double pneumonia.
Chronic nephritis	62	41	21			3	9	20	17	8	5	7	8	14	21	8	3	1				19	8	2	4	20	9	3 readmissions. Probable exposure to lead in 8. No P.M. in 8. In 15 fatal cases examined after death there was chronic interstitial nephritis; in 6 chronic tubular nephritis.
Cystic kidneys	1	1							1				1													1			Very advanced condition.
Tubercle of kidneys	1	1					1							1												1			Chronic tubercle of kidneys, ureters, bladder, and right epididymis; acute tubercle of lungs and intestine.
Renal calculus	4	3	1			1	2	1				1		2	1					1		2			1				On the left side in 3; on the right in 1.
Pyelitis	4		4		1	1	2					1		2	1								3		1				1 probably tubercular.
Hydronephrosis	1	1							1					1												1			Dilatation of bladder and cardiac hypertrophy.
Movable kidney	3		3					2		1			1	2									2		1				Pyelitis in 1.
Cystitis	1	1				1										1								1					Transferred to surgical ward, where he died after operation for calculus.

TABLE III—*continued.*

DISEASE.	Number of cases.			Age.								Duration of residence.								Cured		Relieved.		Unrelieved.		Died.		REMARKS.
	Total.	M.	F.	Under 5	5–10	–20	–30	–40	–50	–60	Above 60	Under 1 week	Wks. 1–2	Wks. 2–4	Mts. 1–2	Mts. 2–4	Mts. 4–6	Mts. 6–9	Mts. 9–12	Above 1 year	M.	F.	M.	F.	M.	F.	M.	F.	
VIII. DISEASES OF THE NERVOUS SYSTEM.																												
Acute meningitis	1	1	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	A doubtful case.
Retraction of head	3	2	1	3	...	...	...	...	...	...	...	...	2	1	...	...	...	...	...	...	1	1	...	...	1	...	...	...	Epileptic attack in 1.
Tubercular meningitis	6	4	2	1	2	1	1	1	...	...	...	4	2	...	...	...	...	...	...	...	...	...	...	...	...	...	4	2	1 had been previously admitted for pleurisy (q. v.). In 1 the meningitis was chronic.
Meningeal hæmorrhage	1	1	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	Extensive extravasation under dura mater, adherent clot in longitudinal sinus. Patient had been previously admitted for epilepsy (q. v.).
Hemiplegia	30	18	12	1	...	1	4	4	6	9	5	2	3	8	8	5	2	2	...	...	...	...	13	7	5	5	...	...	18 on the right side, 12 on the left. Aphasia in 6, all cases of right hemiplegia; late rigidity in 4; double ankle-clonus in 1.
Aphasia	1	1	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	No paralysis of any kind.
Post-hemiplegic hemichorea	2	2	...	...	...	...	...	2	...	...	...	...	...	...	1	1	...	...	...	...	...	...	1	...	1	...	...	...	Both on the right side. Hemianopia in 1.
Cerebral hæmorrhage	2	2	...	...	...	...	...	...	...	1	1	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	2	...	Vacuoles in pons in 1; hæmorrhage into internal capsule, descending sclerosis, and granular kidneys in 1. For other cases of cerebral hæmorrhage, see Chronic Nephritis.
„ tumour	16	10	6	3	4	3	1	2	2	...	1	2	4	2	3	4	1	...	...	...	...	...	2	2	2	1	6	3	1 readmitted twice. Cerebellar disease in 3 fatal cases.

																														2, at least, of the non-fatal cases were due to syphilis.
„ abscess .	1	1	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	Abscess involving left ascending convolutions, acute meningitis, localised spinal meningitis, phthisis, abscesses in kidneys.
Cerebellar abscess .	1	...	1	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	Abscess of right lobe; no evident disease of bone.
„ cyst . .	1	...	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	Simple serous cyst in left lobe.
Sclerosis of cerebellum	1	1	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	Sclerotic patch on under surface of flocculus.
Chronic hydrocephalus	1	1	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	..	...	...	
Cephalalgia . .	6	3	3	...	...	2	...	2	1	...	1	2	1	2	1	...	...	...	...	...	3	3	...	...	...	...	...	...	
Obscure cerebral diseases	8	7	1	1	...	...	...	1	2	1	3	1	...	4	1	...	1	...	1	...	...	1	3	...	4	...	...	...	Monocular diplopia in 2; diabetes insipidus in 1; suspicion of general paralysis in 1.
Infantile spasmodic paralysis	2	1	1	...	...	2	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	1	...	...	1	..	...	Both probably congenital. Adductor spasm in both. Atrophy of terminal phalanges of one hand in 1.
Menière's disease .	1	...	1	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	
Paralysis agitans .	3	3	...	...	...	...	...	...	...	2	1	...	...	3	...	...	...	...	...	...	...	1	...	2	...	...	...	...	
Bulbar paralysis. .	2	2	...	...	...	...	...	...	2	...	...	...	...	2	...	...	...	...	...	...	...	...	1	...	1	...	...	...	1 had had a previous attack of hemiplegia.
Laryngismus stridulus	1	1	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	
Dysphagia of nervous origin	1	...	1	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	..	...	...	...	Incoordination of the mechanism of swallowing.
Idiopathic tetanus .	1	1	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	
Tetany . . .	4	4	...	3	...	...	...	1	...	...	...	...	2	2	...	...	..	...	...	...	3	...	...	...	...	1	...	...	Fatal case a readmission; rickets and pyelitis, but no change in nervous system, found P.M. Dysentery in 1, an adult; bronchitis in 1.
Idiocy . . .	1	1	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	
General paralysis of insane	12	12	...	...	...	...	...	10	1	1	...	1	3	3	3	2	...	...	...	...	...	...	3	...	9	...	...	...	1 readmission. Marked ataxy in 1.

Table III—*continued.*

DISEASE.	Number of cases.			Age.								Duration of residence.								Cured.		Relieved.		Unrelieved.		Died.		REMARKS.
	Total.	M.	F.	Under 5	5–10	–20	–30	–40	–50	–60	Above 60	Under 1 week	Wks. 1–2	Wks. 2–4	Mts. 1–2	Mts. 2–4	Mts. 4–6	Mts. 6–9	Mts. 9–12	Above 1 year	M.	F.	M.	F.	M.	F.	M.	F.	
VIII. Diseases of the Nervous System—*continued.*																												
Other mental disorders	7	3	4	...	...	3	1	2	1	...	...	3	2	1	...	1	...	...	...	...	1	...	1	...	1	4	...	...	1 case of hypochondriasis; 1 of dementia; 1 of mania.
Chorea . . .	27	3	24	...	2	22	3	...	...	...	...	...	3	4	15	5	...	...	...	...	3	15	...	7	...	1	...	1	General cerebral congestion, early aortic and mitral disease in fatal case; 1 contracted whooping-cough in hospital.
Hysteria . . .	41	4	37	...	1	15	16	7	2	...	...	4	10	12	8	6	1	...	...	...	1	7	3	19	...	11	...	...	1 contracted rötheln in hospital.
Epilepsy . . .	26	17	9	5	2	9	4	2	3	1	...	11	9	5	...	1	...	...	...	...	3	3	10	5	4	1	...	...	5 were cases of infantile convulsions, 1 of which was associated with rickets. One patient was readmitted, and died of meningeal hæmorrhage (q. v.). 1 had infantile spasmodic paralysis. In 1 the fit was probably due to head injury, and the patient was transferred to surgical wards. History of syphilis in 1; of alcoholism in 2.
Paraplegia . .	21	10	11	...	2	6	4	2	6	1	...	1	1	5	3	7	4	...	...	...	1	...	4	2	5	9	...	...	Vertebral caries in 10; syphilis in 4; malignant disease of vertebræ secondary to scirrhus of breast in 1. 1 was a case of hemiparaplegia.

Myelitis . . .	4	2	2	...	...	...	...	...	1	...	3	...	1	2	...	1	...	...	...	...	...	...	...	...	...	2	2				
Locomotor ataxy .	7	6	1	...	...	..	...	5	1	...	1	1	...	3	2	1	...	...	...	...	...	...	1	...	5	1	...	...			Paralysis of abductors of larynx in 1; perforating ulcer in 1; spinal curvature in 1; arthropathy of left shoulder in 1.
Lateral sclerosis .	1	1	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...			Possibly of congenital syphilitic origin.
Amyotrophic lateral sclerosis	3	3	...	...	...	...	...	2	1	...	...	...	...	...	2	1	...	...	...	...	...	...	1	...	2	...	...	...			1 case doubtful; marked bulbar symptoms in 1.
Disseminated sclerosis	4	2	2	...	...	...	...	3	..	1	...	...	...	1	2	1	...	...	...	...	...	...	1	1	1	1	...	...			
Adult spinal paralysis	2	2	...	...	...	...	...	1	...	1	...	...	...	1	1	...	...	...	...	...	...	...	2	...	...	...	...	...			Right arm affected in 1; right leg in 1.
Infantile paralysis .	4	...	4	2	...	2	..	...	...	...	...	...	...	1	...	1	1	...	1	...	...	...	...	3	...	1	...	...			
Subacute anterior poliomyelitis	5	4	1	...	...	...	2	...	2	1	...	...	...	2	1	1	...	1	...	...	1	..	1	...	...	...	2	1			2 were probably cases of alcoholic paralysis.* In both cirrhosis of liver was found P.M.
Progressive muscular atrophy	1	1	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...				An advanced case. No clinical history.
Tumours of spinal cord	1	1	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...			Two tumours, probably gummata, springing from the arachnoid. There was acute myelitis of the whole cord. There was also old arachnitis over two inferior frontal convolutions on left side.
Optic-nerve atrophy .	1	1	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...				No obvious spinal affection.
Paralysis of 6th nerve	2	...	2	...	...	1	...	...	1	...	...	...	...	1	...	1	...	...	...	...	...	...	...	2	...	...	...	...			Probable tumour in both cases. 1 has since developed ophthalmoplegia externa.
Facial paralysis . .	1	...	1	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	..	...				Weakness of left arm. Suspicion of cerebral tumour.
Neuralgia . . .	1	...	1	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...			
Sciatica . . .	7	6	1	...	...	...	3	1	...	3	...	...	...	2	4	1	...	...	...	...	2	...	4	...	...	1	...	...			Right side affected in 3; left side in 4.
Atrophy of deltoid .	1	1	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...			

* In the two fatal cases of alcoholic paralysis the spinal cord was found healthy when examined microscopically, but in one there were obvious changes in the peripheral nerves.

Table III—*continued.*

DISEASE.	Number of cases.			Age.								Duration of residence.									Cured.		Relieved.		Unrelieved.		Died.		REMARKS.
	Total.	M.	F.	Under 5	5–10	–20	–30	–40	–50	–60	Above 60	Under 1 week	Wks. 1–2	Wks. 2–4	Mts. 1–2	Mts. 2–4	Mts. 4–6	Mts. 6–9	Mts 9–12	Above 1 year	M.	F.	M.	F.	M.	F.	M.	F.	
IX. Poisoning.																													
Alcoholism	8	5	3	...	...	...	3	3	2	...	...	4	4	...	...	...	...	...	...	...	3	3	2	...	...	...	...	...	3 were cases of delirium tremens.
Plumbism	6	6	...	...	...	...	1	3	...	2	...	...	...	3	1	1	1	...	...	...	1	...	4	...	1	...	...	...	1 readmission. Colic in 2; colic and wrist-drop in 1; atrophy and rigidity of muscles in 3. See also Chronic Nephritis.
Belladonna	1	1	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	Suicidal.
Opium	4	4	...	1	...	...	...	1	2	...	...	4	...	...	...	...	...	...	...	...	3	...	...	...	...	...	1	...	Opium found in contents of stomach in fatal case, a child. 1 was a habitual morphia taker.
Chlorodyne	1	...	1	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	Accidental.
Camphorated oil	1	...	1	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	Suicidal.
Carbolic acid	4	4	...	2	...	...	...	...	1	...	...	3	1	...	...	...	...	...	...	...	1	...	...	...	...	...	3	...	Laryngitis and bronchitis in 1 fatal case; whitening of fauces, œsophagus, and stomach in 2.
Nitric acid	1	1	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	Suicidal.
Hydrochloric acid	1	1	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	Accidental.
Sulphuric acid	1	1	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	Corrosion of mouth, air-passages, œsophagus, &c.
Red precipitate	2	1	1	...	...	...	1	...	...	1	...	...	1	1	...	...	...	...	...	...	1	1	...	...	...	...	...	...	Both suicidal.
Paraffin	1	...	1	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	
Doubtful	1	1	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	Said to be ammonia. Blackening of mucous membrane of œsophagus found P.M.

X. Surgical and Miscellaneous.																													
Immersion	9	6	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	3	...	...	...	...	...	...	4, at least, suicidal; 2 probably insane; 2 developed bronchitis.
Debility	18	8	10	1	2	...	7	3	1	3	1	4	8	5	...	...	1	...	...	...	4	7	4	3	...	...	...	...	1 readmission (see Diphtheria). 2 after enteric fever; 2 after acute rheumatism.
Inanition	2	2	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	Insanity and articular rheumatism in 1.
Obesity	1	1	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	
Vertebral caries	4	3	1	...	1	2	1	...	...	...	...	...	1	1	...	2	...	...	...	...	...	...	1	1	1	...	1	...	Psoas abscess in 1; caries of ribs in 1. Double psoas abscess and amyloid disease in fatal case.
Disease of hip	3	1	2	1	1	1	...	...	...	...	...	2	...	...	...	1	...	...	...	...	...	...	...	...	1	2	...	...	All transferred to surgical wards.
Disease of knee	1	...	1	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	Transferred to surgical ward.
Disease of ankle	1	...	1	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	Transferred to surgical ward.
Dislocation of joints	1	1	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	Probably of nervous origin, and allied to tabetic arthropathy.
Carcinoma of breast	3	...	3	...	...	...	...	...	2	1	...	...	1	1	...	1	...	...	...	...	...	...	...	...	...	2	...	1	Secondary disease of liver in fatal case.
Various	38	23	14	10	2	5	8	3	7	1	2	11	10	7	6	4	...	...	...	...	10	7	3	3	7	2	4	2	9 were unclassified. Of the fatal cases, 1 was malignant disease of femur; 1 malignant growth at base of skull; 1 malignant growth of pelvis; 1 necrosis of temporal bone and tuberculosis; 1 suppurating bronchial glands; and 1 spina bifida. 1, suffering from abscess outside elbow-joint, contracted scarlet-fever (q. v.).

TABLE III—*continued.*

DISEASE.	Number of cases.			Age.							Duration of residence.								Cured.		Relieved.		Unrelieved.		Died.		REMARKS.
	Total.	M.	F.	Under 5	5–10	–20	–30	–40	–50	–60	Above 60	Under 1 week	Wks. 1–2	Wks. 2–4	Mts. 1–2	Mts. 2–4	Mts. 4–6	Mts. 6–9	Mts. 9–12	Above 1 year	M.	F.	M.	F.	M.	F.	M.	F.	
XI. DISEASES OF THE FEMALE GENERATIVE ORGANS.																												
1. *Uterus.*																												
Amenorrhœa	2	...	2	...	...	...	1	1	...	...	...	...	1	1	...	...	...	...	...	...	...	1	...	1	...	...	...	...	
Metrorrhagia	1	...	1	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	Probably due to fibroid tumour.
Dysmenorrhœa	1	...	1	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	Division of cervix.
Parametritis	18	...	18	...	...	1	10	5	1	...	1	2	1	7	6	2	...	...	...	...	...	11	...	6	...	1	...	...	
Pelvic hæmatocele	1	...	1	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	
Prolapse of uterus	3	...	3	...	...	...	...	2	1	...	...	...	1	1	1	...	...	...	...	...	...	...	...	3	...	...	...	...	Ruptured perinæum in 2; ulceration of os in 2.
Anteversion of uterus	3	...	3	...	...	...	1	2	...	...	...	...	...	1	2	...	...	...	...	...	...	1	...	2	...	...	...	...	Endometritis and perimetritis in 1; stenosis of cervix in 1; subinvolution in 1.
Anteflexion of uterus	13	...	13	...	...	2	4	7	...	...	...	...	1	6	4	1	1	...	...	...	...	3	...	10	...	...	...	...	1 readmission. Division of cervix in 5; endometritis in 3; parametritis in 1.
Retroversion of uterus	6	...	6	...	...	...	3	2	1	...	...	1	...	2	3	...	...	...	...	...	...	4	...	2	...	...	...	...	Chronic endometritis in 1; incontinence of urine in 1.
Retroflexion of uterus	19	...	19	...	...	...	10	6	3	...	...	1	2	5	8	3	...	...	...	...	...	5	...	12	...	1	...	1	1 case congenital. Endometritis in 2; endocervicitis in 1; ovaritis in 1; hyperplasia of cervix in 1; metrorrhagia in 2.
Endometritis	17	...	17	...	...	...	12	4	...	1	...	1	1	4	10	1	...	...	...	...	...	6	...	10	...	1	...	...	Retroversion in 2; retroflexion in 2; ovaritis in 2; subovaritis in 2; parametritis in 4; polypus in 1; uterine hyperplasia in 1.

Uterine polypus	3		3				3						1	2						3						1 a placental polypus. Parametritis in 1; retroversion in 1. 1 contracted rötheln (q. v.).
„ fibroid	9		9				5	4			1	2	1	4	1					1		3		3		2	Sloughing fibroid and acute peritonitis in 1 fatal case. Suppurating ovarian cyst in 1.
„ tumour	1		1						1			1												1			Of doubtful nature.
Malignant disease of uterus	16		16				2	7	6	1	2	1	5	7	1							10		4		2	Secondary disease of peritoneum in the fatal case.
Subinvolution	2		2				1		1					2						1		1					
Metritis	2		2						2						2							2					Retroversion in 1; retroflexion and cervical polypus in 1.
Inversion	1		1						1					1						1							
Infantile uterus	1		1				1						1									1					Amenorrhœa.
Hysteralgia	1		1				1					1												1			
Dilated Fallopian tube	2		2						2					2								2					Readmission. A doubtful case.
Tubercle of Fallopian tube	1		1				1									1										1	Tubercle of Fallopian tubes, uterus, peritoneum, and lungs.
Acute salpingitis	1		1				1					1														1	Acute salpingitis and peritonitis.
Endocervicitis	2		2				2						1	1								2					Ruptured perinæum in 1.
Polypus of cervix	1		1					1					1							1							Removed by écraseur.
Conical cervix	2		2					1	1					2						2							Division of internal os in both.
Stenosis of cervix	19		19				11	8				1	9	8	1					15		4					Division in all. Anteflexion in 5; retroversion in 1; parametritis in 1; infantile uterus in 1; urethral caruncle in 1.
Hypertrophy of cervix	7		7				3	4						5	2					4		3					1 readmission. Amputation in 3; cautery in 3.
Laceration of cervix	2		2					1	1			1		1						1		1					Subinvolution and retroflexion in 1.

Table III—*continued.*

DISEASE.	Number of cases.			Age.								Duration of residence.								Cured.		Relieved.		Unrelieved.		Died.		REMARKS.
	Total.	M.	F.	Under 5	5–10	–20	–30	–40	–50	–60	Above 60	Under 1 week	Wks. 1–2	Wks. 2–4	Mts. 1–2	Mts. 2–4	Mts. 4–6	Mts. 6–9	Mts. 9–12	Above 1 year	M.	F.	M.	F.	M.	F.	M.	F.	
XI. Diseases of the Female Generative Organs—*continued.*																												
2. *Ovaries.*																												
Prolapsed ovary	1	...	1	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	
Ovaritis	8	...	8	...	...	1	4	2	1	...	...	1	...	3	3	1	...	...	...	...	...	1	...	5	...	2	...	...	2 readmissions (see Stenosis of Cervix and Anteflexion).
Ovarian tumour	11	...	11	...	...	1	...	1	2	4	3	1	4	1	4	1	...	...	...	...	...	...	...	3	...	6	...	2	1 readmitted twice. Both fatal cases malignant, with extensive secondary disease. 5 transferred to surgical wards.
3. *Accidents of Pregnancy.*																												
Abortion	4	...	4	...	...	...	4	...	..	...	...	1	1	2	...	...	...	...	...	...	2	...	2	...	...	...	...	
Retained fœtal products	11	...	11	...	...	1	4	5	1	...	...	2	2	2	4	1	...	...	...	...	7	...	1	...	1	...	2	Adherent placenta and tetanus in 1; adherent placenta, septicæmia and disseminated sarcoma in 1.
Threatened miscarriage	1	...	1	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	Thrombosis of veins of left leg.
Metrorrhagia after miscarriage	1	...	1	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	
Induction of abortion	1	...	1	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	Cephalotripsy performed two years ago.
Pregnancy	1	...	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	Strangulated hernia, which was reduced after induction of labour.
Retroversion of gravid uterus	1	...	1	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	Induced premature labour.

Albuminuria in pregnancy	1	...	1	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	Induced premature labour.
Parturition	2	...	2	...	...	1	1	...	...	...	...	1	1	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	
Secondary post-partum hæmorrhage	1	...	1	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	
Septicæmia after parturition	1	...	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	Pericarditis and double pneumonia.
Extra-uterine fœtation	1	...	1	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	A doubtful case.
Phlegmasia dolens	3	...	3	...	...	...	2	1	...	...	...	...	...	1	2	...	...	...	...	...	...	3	...	...	...	...	...	...	On the left side in 2; on the right in 1.
Ruptured perinæum	11	...	11	...	...	...	4	6	1	...	...	...	1	4	6	...	...	...	...	...	...	7	...	2	...	2	...	...	1 readmission (see Endocervicitis).
4. *Various.*																													
Labial abscess	1	...	1	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	
Ulceration of nymphæ	1	...	1	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	Possibly syphilitic.
Fibrocellular growth of nymphæ	2	...	2	...	...	...	2	...	...	...	...	...	...	...	2	...	...	...	...	...	...	1	...	...	...	1	...	...	1 readmission. Growth removed.
Carcinoma of vulva	1	...	1	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	
Urethral caruncle	4	...	4	...	...	...	3	...	...	...	1	...	...	3	1	...	...	...	...	...	...	3	...	1	...	...	...	...	Endometritis and retroflexion in 1.
Atresia vaginæ	1	...	1	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	
Vaginitis	2	...	2	...	...	...	1	1	...	...	...	...	...	1	1	...	...	...	...	...	...	2	...	...	...	...	...	...	Erosion of os and old laceration of perinæum.
Vaginal cyst	1	...	1	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	Endometritis. Cyst removed.
Epithelioma of vagina	1	...	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	
Cystocele	1	...	1	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	
Vesico-vaginal fistula	2	...	2	...	...	...	1	1	...	...	...	...	...	...	1	1	...	...	...	...	...	2	...	...	...	...	...	...	
Vesico-uterine fistula	1	...	1	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	
Recto-vaginal fistula	2	...	2	...	...	...	1	1	...	...	...	...	...	1	1	...	...	...	...	...	...	1	...	1	...	...	...	...	
Cystitis	1	...	1	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	
Fistula in ano	1	...	1	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	
Contracted pelvis	1	...	1	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	
Total	1877	878	999																		363	436	226	307	102	130	187	126	
																					799		533		232		313		
																					1877								

Table IV.—*Table of Mortality.*

DISEASE.	Total.		Age.									Mortality per cent.
	No. discharged.	No. died.	Under 5	5–10	–20	–30	–40	–50	–60	–70	Above 70	
1. General Diseases.												
Scarlet fever	22	1	1	...	...	...	...	...	...	...	...	4·3
Enteric fever	77	6	...	2	2	...	2	...	...	...	...	7·2
Cerebro-spinal meningitis	...	1	1	...	...	...	...	...	...	...	...	...
Erysipelas	19	3	...	...	...	2	1	...	...	...	...	13·6
Pyæmia	1	1	...	...	...	...	1	...	...	...	...	...
Diphtheria	16	16	9	4	3	...	...	...	...	...	..	50
Acute rheumatism	115	1	...	...	...	...	...	...	1	...	...	0·8
Gout	14	1	...	...	...	1	...	...	...	...	...	6·6
Diabetes	3	4	...	...	...	1	1	1	1	...	...	...
Purpura	3	5	3	2	...	...	...	...	...	...	...	...
Pernicious anæmia	3	1	...	...	...	...	1	...	...	...	...	...
Lymphadenoma	1	1	...	...	...	1	...	...	...	...	...	...
General tuberculosis	...	6	1	3	1	...	1	...	...	...	...	...
General carcinoma	...	1	...	...	...	...	...	...	1	...	...	...
2. Diseases of the Respiratory Organs.												
Sarcoma of larynx	...	1	...	...	...	...	...	...	1	...	...	...
Papilloma of larynx	...	1	1	...	...	...	...	...	...	...	...	...
Abscess of larynx	1	1	...	...	...	...	...	1	...	...	...	...
Necrosis of right arytænoid	...	1	1	...	...	...	...	...	...	...	...	...
Acute bronchitis	13	1	...	...	...	...	1	...	...	...	..	7·1
Subacute and chronic bronchitis	24	6	...	...	...	...	...	3	1	1	1	20
Broncho-pneumonia	3	3	3	...	...	...	...	...	...	...	...	...
Acute pneumonia	57	18	4	...	...	3	3	6	...	2	...	24
Phthisis	63	37	1	1	3	11	10	5	6	...	...	37
Pleurisy	36	5	1	...	...	2	2	...	...	...	...	12·1
Empyema	6	5	1	1	1	1	1	...	...	...	...	45·4
Intrathoracic tumour	4	1	...	...	...	...	...	1	...	...	...	...
3. Diseases of the Organs of Circulation.												
Pericarditis	2	1	1	...	...	...	...	...	...	...	...	...
Adherent pericardium	1	2	...	1	1	...	...	...	...	...	...	...
Hypertrophy of heart	...	1	...	...	...	...	...	...	1	...	...	...
Mitral disease	38	10	...	...	3	2	2	2	1	...	...	20·8
Aortic disease	9	9	...	...	...	1	2	4	2	...	...	50
Mitral and aortic disease	16	18	...	1	2	6	3	2	3	...	1	52·9
Thoracic aneurysm	13	4	...	...	...	...	...	3	...	...	1	23·5
Abdominal aneurysm	2	2	...	...	...	1	1	...	...	...	...	...
Thrombosis of portal vein	...	1	...	...	1	...	...	...	...	...	...	...
4. Diseases of the Ductless Glands.												
Addison's disease	2	1	...	...	...	...	1	...	...	...	...	...

TABLE IV—*continued.*

DISEASE.	Total.		Age.									Mortality per cent.
	No. discharged.	No. died.	Under 5	5–10	–20	–30	–40	–50	–60	–70	Above 70	
5. DISEASES OF THE DIGESTIVE ORGANS.												
Stricture of œsophagus	3	2	...	...	...	...	...	1	...	1	...	...
Acute gastritis	1	1	1	...	...	...	...	...	...	...	...	...
Carcinoma of stomach	6	5	...	...	...	...	1	1	2	1	...	45·4
Diarrhœa	15	2	2	...	...	...	...	...	...	...	...	11·7
Enteritis	3	3	2	...	...	...	1	...	...	...	...	...
Dysentery	5	1	...	...	...	1	...	...	...	...	...	...
Intestinal obstruction	6	3	1	...	...	1	...	...	1	...	...	...
Tubercular ulceration of intestine	...	1	1	...	...	...	...	...	...	...	...	...
Perforation of vermiform appendix	...	1	...	...	...	1	...	...	...	...	...	...
Acute peritonitis	2	1	...	...	...	1	...	...	...	...	...	...
Chronic peritonitis	14	6	1	...	1	...	1	...	...	3	...	30
Carcinoma of peritoneum	...	1	...	...	...	...	...	1	...	...	...	...
Cirrhosis of liver	11	6	...	...	1	1	...	2	1	1	...	35·2
Cancer of liver	1	5	...	...	...	...	...	2	1	1	1	...
Obstructive jaundice	16	1	...	...	...	...	...	...	...	1	...	5·8
Malignant of pancreas	...	2	...	...	...	...	...	...	2	...	...	...
Abdominal tumour	7	4	...	...	...	...	...	2	1	1	...	36·3
6. DISEASES OF THE GENITO-URINARY SYSTEM.												
Acute nephritis	17	1	...	...	1	...	...	...	...	...	...	5·5
Chronic nephritis	33	29	...	...	1	3	9	6	6	1	3	46·7
Cystic kidneys	...	1	...	...	...	...	...	1	...	...	...	...
Tubercle of kidneys	...	1	...	...	...	1	...	...	...	...	...	...
Hydronephrosis	...	1	..	...	...	...	...	1	...	...	...	...
7. DISEASES OF THE NERVOUS SYSTEM.												
Tubercular meningitis	...	6	1	2	1	1	1	...	...	...	...	...
Meningeal hæmorrhage	...	1	...	...	...	...	...	1	...	...	...	...
Cerebral hæmorrhage	...	2	...	...	...	...	...	...	1	1	...	...
Cerebral tumour	7	9	3	...	3	1	...	1	...	1	...	56·2
Cerebral abscess	...	1	...	...	...	...	...	1	...	...	...	...
Cerebellar abscess	...	1	...	...	...	...	...	1	...	...	..	...
Cerebellar cyst	...	1	...	...	...	1	...	...	...	...	...	...
Sclerosis of cerebellum	...	1	...	1	...	...	...	...	...	...	...	...
Tetany	3	1	1	...	...	...	...	...	...	...	...	...
Chorea	26	1	...	...	1	...	...	...	...	...	...	3·7
Myelitis	...	4	...	...	...	...	...	1	...	3	...	...
Subacute anterior poliomyelitis	2	3	...	...	...	1	...	2	...	...	...	...
Tumours of spinal cord	...	1	...	...	...	...	1	...	...	...	...	...
8. POISONING.												
Opium	3	1	1	...	...	...	...	...	...	...	...	...
Carbolic acid	1	3	1	...	...	1	...	1	...	...	...	...
Sulphuric acid	...	1	...	...	...	1	...	...	...	...	...	...
Doubtful	...	1	1	...	...	...	...	...	...	...	...	...

TABLE IV—*continued.*

DISEASE.	Total.		Age.									Mortality per cent.
	No. discharged.	No. died.	Under 5	5–10	–20	–30	–40	–50	–60	–70	Above 70	
9. SURGICAL AND MISCELLANEOUS.												
Vertebral caries	3	1	...	1	...	...	...	...	...	...	...	...
Carcinoma of breast	2	1	...	...	...	...	...	1	...	...	...	...
Malignant disease of femur	...	1	...	...	...	...	1	...	...	...	...	...
Malignant disease of base of skull	...	1	...	...	...	...	...	1	...	...	...	...
Malignant disease of pelvis	...	1	...	...	...	...	...	1	...	...	...	...
Necrosis of temporal bone	...	1	1	...	...	...	...	...	...	...	...	...
Spina bifida	...	1	1	...	...	...	...	...	...	...	...	...
10. DISEASES OF THE FEMALE GENERATIVE ORGANS.												
Retroflexion	18	1	...	...	...	...	..	1	...	...	...	5·2
Uterine fibroid	7	2	...	...	...	...	2	...	...	...	...	...
Malignant disease of uterus	14	2	...	...	...	...	1	...	1	...	...	12·5
Tubercle of Fallopian tubes	...	1	...	...	...	1	...	...	...	...	...	...
Acute salpingitis	...	1	...	...	...	1	...	...	...	...	...	...
Ovarian tumour	9	2	...	...	...	...	...	1	1	...	...	18·1
Retained fœtal products	9	2	...	...	...	1	1	...	...	...	...	18·1
Septicæmia after parturition	...	1	...	...	...	1	...	...	...	...	...	...

TABLE V.—*Cases of Infectious Diseases originating in Hospital.*

Initials.	Sex.	Age.	Disease for which admitted.	Disease originating in hospital.	Date of attack.	Result.	Remarks.
C. G.	F.	25	Uterine polypus	Rötheln	Feb. 25	C. March 21	From Adelaide Ward.
A. D.	F.	23	Hysteria	Ditto	June 7	C. June 11	From Charity Ward.
F. B.	F.	19	Acute Rheumatism	Measles	June 21	C. July 4	Ditto.
K. G.	F.	2	Disease of ankle	Ditto	July 8	C. July 30	From Victoria Ward.
E. S.	M.	5	Cerebral tumour	Ditto	July 23	C. August 6	Ditto.
W. J.	M.	1	Congenital deformity of arm and leg	Ditto	July 24	C. August 6	Ditto.
H. C.	M.	4	Infantile paralysis	Ditto	Aug. 10	C. August 23	Ditto.
H. A.	M.	5	Hip disease	Varicella.	Sept. 12	C. Sept. 19	Ditto.
G. C.	M.	4	Scald	Ditto	Dec. 5	C. Feb. 4	From Elizabeth Ward.
H. H.	M.	6	Fractured femur	Scarlet fever	Feb. 8	C. March 18	From Leopold Ward.
J. E.	M.	21	Enteric fever	Typhus fever	April 17	C. June 2	From Job Ward.
M. N.	M.	39	Ruptured urethra	Enteric fever	Aug. 30	C. Oct. 20	From Edward Ward.
J. R.	F.	27	—	Ditto	April 25	C. June 16	Ward maid in infectious block.
R. J.	F.	33	Diarrhœa	Facial erysipelas	Dec. 1	D. Dec. 6	From Christian Ward.
E. S.	F.	30	—	Diphtheria	Oct. 6	C. Oct. 13	A nurse.
J. S.	F.	10	Chorea	Pertussis	Sept. 2	Nil. Sept. 5	From Christian Ward.

TABLE VI.—*Showing the relative frequency of the various complications of Acute Rheumatism in the first, second, and third, or later attack.*

ACUTE RHEUMATISM.	Total.	Discharged.		Died.		Under 5	5–10	–20	–30	–40	–50	–60	Above 60	Per cent.
		M.	F.	M.	F.									
Total of cases	115	57	57	...	1	...	3	39	47	19	5	2	...	...
1st attack	46	20	25	...	1	...	1	15	19	7	3	1	...	40
2nd „	37	16	21	...	...	...	2	16	14	3	1	1	...	32·17
3rd „	32	21	11	...	...	...	...	8	14	9	1	...	...	27·82
Heart and Pericardium:														
Normal	27	...	...	...	...	...	...	...	...	...	...	...	...	23·47
1st attack	19	13	6	...	...	...	1	4	8	5	1	...	...	41·3
2nd „	5	3	2	...	...	...	...	...	3	1	1	...	...	13·51
3rd „	3	...	...	...	...	...	...	2	1	...	...	...	...	9·37
Transient murmur	9	...	...	...	...	...	...	...	...	...	...	...	...	7·82
1st attack	2	1	1	...	...	...	...	2	...	..	...	...	...	4·34
2nd „	4	3	1	...	...	...	...	2	2	...	...	...	...	10·81
3rd „	3	1	2	...	...	...	...	...	...	2	1	...	...	9·37
Pericarditis	26	...	...	...	...	...	...	...	...	...	...	...	..	22·6
1st attack	10	3	6	...	1	...	...	4	4	1	...	1	...	21·73
2nd „	8	2	6	...	...	...	...	6	2	...	...	...	...	21·62
3rd „	8	3	5	...	...	...	...	2	4	2	...	...	...	25
Mitral obstruction	12	...	...	...	...	...	...	...	...	...	...	...	...	10·43
1st attack	2	1	1	...	...	...	...	1	1	...	...	...	...	4·34
2nd „	3	1	2	...	...	...	...	3	...	...	...	...	...	8·1
3rd „	7	6	1	...	...	...	...	4	2	1	...	...	...	21·87
Mitral regurgitation	69	...	...	...	...	...	...	...	...	...	...	...	...	60
1st attack	24	9	15	...	...	...	...	9	10	3	2	...	...	52·17
2nd „	23	7	16	...	...	...	2	12	8	...	...	1	...	62·16
3rd „	22	14	8	...	...	...	...	6	9	7	...	...	...	68·75
Aortic obstruction	11	...	...	...	...	...	...	...	...	...	...	...	...	9·56
1st attack	1	1	...	...	...	...	...	1	...	...	...	...	...	2·17
2nd „	3	2	1	...	...	...	...	2	1	...	...	...	...	8·1
3rd „	7	6	1	...	...	...	...	2	4	1	...	...	.	21·87
Albuminuria	16	...	...	...	...	...	...	...	...	...	...	...	...	13·91
1st attack	9	2	6	...	1	...	...	3	3	1	1	1	...	19·56
2nd „	2	2	...	...	...	...	...	...	1	1	...	...	...	5·4
3rd „	5	3	2	...	...	...	...	1	1	3	...	...	...	15·62
Delirium	2	...	...	...	...	...	...	...	...	...	...	...	...	1·73
1st attack	1	...	1	...	...	...	...	...	...	1	...	...	...	2·17
2nd „	1	1	...	...	...	...	...	...	1	...	...	...	...	2·7
3rd „	...	...	...	...	...	...	...	...	...	...	...	...	...	...

TABLE VI—*continued.*

ACUTE RHEUMATISM.	Total.	Discharged.		Died.		Under 5	5–10	–20	–30	–40	–50	–60	Above 60	Per cent.
		M.	F.	M.	F.									
Bronchitis	7	...	...	...	...	...	...	...	...	...	...	..	...	6·08
1st attack	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2nd „	5	1	4	...	...	...	2	1	1	...	...	1	...	13·51
3rd „	2	1	1	...	...	...	...	...	...	2	...	...	...	6·25
Pleurisy	9	...	...	...	...	...	...	...	...	...	...	...	...	7·82
1st attack	5	1	4	...	...	...	...	2	1	1	1	...	...	10·86
2nd „	1	...	1	...	...	...	...	...	1	...	...	...	...	2·7
3rd „	3	2	1	...	...	...	...	1	1	1	...	...	...	9·37
Pneumonia	3	...	...	...	...	...	...	...	...	...	...	...	...	2·6
1st attack	1	...	...	...	1	...	...	...	...	...	...	1	...	2·17
2nd „	1	1	...	...	...	...	1	...	...	...	...	...	...	2·7
3rd „	1	...	1	...	...	...	...	1	...	...	...	...	...	3·12
Erythema	6	...	...	...	...	...	...	...	...	...	...	...	...	5·21
1st attack	2	...	2	...	...	...	...	1	1	...	...	...	...	4·32
2nd „	3	1	2	...	...	...	...	2	1	...	...	...	...	8·1
3rd „	1	1	...	...	...	...	...	1	...	...	...	...	...	3·12
Chorea	2	...	...	...	...	...	...	...	...	...	...	...	...	1·73
1st attack	1	...	1	...	...	...	...	1	...	...	...	...	...	2·17
2nd „	1	...	1	...	...	...	...	1	...	...	...	...	...	2·7
3rd „	...	...	...	...	...	...	...	...	...	...	...	...	...	...

NOTE.—One case in which the number of previous attacks is not stated is not included.

TABLE VII.—*Showing the causation of cases of Chorea, the number of cases which were unilateral during the whole attack, and the presence or absence of a cardiac murmur.*

CHOREA	Total.	Discharged.		Died.		Under 5	5–10	–20	–30	–40	–50	–60	Above 60	Per cent.
		M.	F.	M.	F.									
Total of cases . . .	27	3	23	...	1	...	2	22	3	...	...	...	...	...
1st attack . . .	17	3	14	...	...	...	2	13	2	...	...	...	...	62·96
2nd „ . . .	10	...	9	...	1	...	...	9	1	...	...	...	...	37·03
I. (*a*) Family history of rheumatism . .	5	...	5	...	...	...	1	3	1	...	...	...	...	18·51
(*b*) Family history of neuroses . .	6	...	6	...	...	...	1	4	1	...	...	...	...	22·22
II. (*a*) Personal history of rheumatism . .	6	1	4	...	1	...	...	6	...	...	...	...	...	22·22
(*b*) Personal history of fright . .	3	1	2	...	...	...	...	3	...	...	...	...	...	11·11
III. Unilateral throughout the attack . .	2	...	2	...	...	...	...	1	1	...	...	...	...	7·4
IV. Transient cardiac murmur . . .	2	...	2	...	...	...	...	2	...	...	...	...	...	7·4
V. Permanent cardiac murmur . . .	17	2	14	...	1	...	1	15	1	...	...	...	...	62·96
VI Pericarditis . . .	1	...	1	...	...	...	...	...	1	...	...	...	...	3·7

Table VIII.—*Diabetes.*

Initials, age, and sex.	History.	General symptoms.	Urine.			Temperature.	Complications.	Remarks and post-mortem examination.
			Quantity.	Sp. gr.	Sugar.			
H. S., 57, M.	Much mental anxiety just before illness, which began 8 months ago with weakness. He has lost flesh, passed much urine, and eaten more of late	Skin loose and harsh; tongue and fauces dry; appetite fair; much thirst; gums swollen and retracted; teeth loose; some hypermetropia; breath odorous of acetone; crepitation at left apex. He gained weight, but 4 months after admission had an attack of left hemiplegia and hemianæsthesia, followed by convulsions, chiefly affecting the paralysed side	98 to 252 ounces	1030 to 1038	2400 to 5220 gr. per diem	97° to 102·2°	Slight albuminuria, phthisis, epileptiform attacks	Special diet. Slight gain in weight. P.M.—Chronic pneumonic consolidation at left apex; recent clot, with pneumonia around, at right apex; no tubercles seen; slight interstitial disease of kidneys; pancreas atrophied; brain healthy.
J. M., 32, M.	Father died of phthisis. Patient had syphilis 6 years ago. Increased quantity of urine, followed by emaciation and thirst, for 3 months	Skin dry and rough; orifice of urethra red; sight good; tongue furred; pulse feeble. Patient gradually became weaker, and developed signs of phthisis. Throughout there was a tendency to drowsiness. He died comatose, with convulsive movements of face, 5 months after admission	48 to 270 ounces	1021 to 1035	2280 to 5440 gr. per diem	97° to 104·8°	Diarrhœa, boils, abscesses, phthisis	Improvement temporarily under arsenic. P.M.—Broncho-pneumonic patches and miliary tubercles at apices; recent right pleurisy; tubercles in kidneys and bladder; no naked-eye change in brain, medulla oblongata, spinal cord, or sympathetic system.
C. S., 46, M.	Diarrhœa and weakness for 5 months, followed by loss of flesh	Skin dry; extremities cold; frequent micturition; drowsiness; prolonged expiration at apices; sweet odour of breath. Later he was found to be colour-blind in centre of field, and there was a central scotoma and slight hypermetropia. Patient became very drowsy, had much headache,	38 to 197 ounces	1026 to 1038	Much	96° to 101·8°	Phthisis, diarrhœa, delusions	No improvement under galvanism applied to head. P.M.—Much fluid in subarachnoid space; convolutions much atrophied; local thickenings of arachnoid; vessels, about fourth ventricle dilated; pancreas remarkably atrophied and

TABLE VIII.—*Diabetes (continued).*

Initials, age, and sex.	History.	General symptoms.	Urine.			Temperature.	Complications.	Remarks and post-mortem examination.
			Quantity.	Sp. gr.	Sugar.			
		lost appetite, and died nearly 7 months after admission						fibrous; tubercles and pneumonic patches in lungs, with cavities at apices; blood showed no milky layer.
C. W., 47, M.	Father and grandmother gouty. Patient has had gout, dysentery, and some liver affection in India, and paraplegia. Lassitude, increased frequency of micturition, emaciation, and vomiting for 3 years	Skin dry; tongue pale, moist, fissured; appetite excessive; thirst; loss of sexual power; spleen and liver enlarged; cataract of right eye	81 to 248 ounces	1030 to 1041	Much	96·2° to 100°	Diarrhœa	Discharged relieved.
J. G., 28, M.	Severe head injury 15 years ago. Drowsiness, thirst, increased frequency of micturition, weakness, and emaciation for a year	Skin dry, especially over hands and arms; tongue dry; appetite fair; bowels confined; very thirsty and drowsy. 10 days after admission he began to vomit, had diarrhœa, the tongue was dry and brown, the face anxious, and the pulse feeble. He died comatose next day	101 to 182 ounces	1045	Much	96·6° to 99·4°	Diarrhœa	P.M.—Small patch of recent pneumonia in left lung; brain, medulla oblongata, and spinal cord congested; pancreas a little soft; blood, and especially lungs, emitted an odour like pears.
A. G., 30, M.	Father probably gouty. Thirst and increased quantity of urine for about 9 months, followed by emaciation	Skin dry and branny; tongue coated; much thirst; loss of appetite; constipation	112 to 356 ounces	1030 to 1042	3·2 to 18 ounces per diem	96° to 102°	Slight albuminuria	Discharged unrelieved. There was a temporary improvement under codeia.
G. W. S., 40, M.	Hæmoptysis 6 years ago. Weakness and emaciation for a year	Much thirst; excessive appetite; pains in limbs. Later, he had an attack of diarrhœa, became drowsy, and lost appetite	101 to 308 ounces	1034 to 1042	3864 to 9316 gr. per diem	96·8° to 98·6°	Slight albuminuria, diarrhœa	Discharged relieved. Treated chiefly by galvanism.

Table IX.—*Purpura.*

Initials, age, and sex.	Family history.	Previous history.	Symptoms.	Remarks and post-mortem examination.
E. G. E., 7, M.	All his brothers and sisters have been ill with slight fever and sorethroat	A month ago had general pains, with fever, chills, and delirium, followed by sorethroat. Spots appeared 3 days before admission. Drains of the house said to be deficient	Small hæmorrhages, not fading on pressure, all over body; most numerous on back and extensor surfaces. No hæmorrhages from mucous membranes. General condition good. Temp. normal, except once, when it was 101·4° p.m.	Discharged cured on the 10th day.
W. B., 5, M.	Father and mother alive and healthy; one brother alive and healthy	Measles when a baby. Has never been a strong child. Very delicate since a "low fever" 4 months ago. A month ago whooping-cough began, and was accompanied by hæmorrhages on the surface of the body and from various mucous membranes	Ill nourished and anæmic; large hæmorrhages on body, tongue, and left conjunctiva; much blood in urine; bronchitis. The hæmaturia continued, and blood was passed by the bowel. There was some bleeding from the mouth and nose. He was delirious at times and suffered from headache. He occasionally whooped. On the 9th day he had an attack of vomiting, followed by convulsions and death. Temp. now and then raised in the evening	P.M.—Numerous hæmorrhages over body. A little blood-stained fluid in pleural and pericardial cavities. A few hæmorrhages on the parietal layers of pleuræ and pericardium, and much extravasation in the subperitoneal tissue on left side. Numerous hæmorrhages over surface of heart. Much extravasation into walls of right auricle. Much bronchitis. Tubercles in both lungs, and a caseous mass at left base. Some extravasated blood in left lung. Bronchial glands caseous. A few hæmorrhages on surface of spleen, and much extravasation into pelvis of left kidney. Hæmorrhages on mucous membrane of bladder, stomach, and intestines. A large hæmorrhage involving the surface and white matter of right tempero-sphenoidal lobe. Capillary hæmorrhages in the neighbourhood and also in white matter of cerebellum. Blood everywhere fluid or softly clotted. Vessels appear healthy. Tissues examined for micro-organisms, but none found.

TABLE IX.—*Purpura (continued).*

Initials, age, and sex.	Family history.	Previous history.	Symptoms.	Remarks and post-mortem examination.
H. F., 6, F.	Good. No history of hæmophilia, purpura, or phthisis	Measles when a year and three months old, followed in about 3 months by purpura. Another attack when 3 years old. Severe epistaxis before admission	Well nourished, but pale. Small hæmorrhages all over body. No hæmorrhages from mucous membranes, but a little bleeding from gums. Slight excess of white blood-corpuscles, and good formation of rouleaux. Passed urine involuntarily once, and had slight choreic twitchings. A trace of albumen once. Discharged cured on the 15th day. Readmitted about 10 months later for the 8th attack. She had epistaxis, melæna, hæmatemesis, and numerous superficial hæmorrhages. She had severe vomiting on the 3rd day, and died on the 4th from loss of blood	P.M.—Hæmorrhages all over surface; most numerous on legs. Petechiæ in internal organs, especially on surface. Brain anæmic and watery. A few petechiæ in arachnoid, especially over cerebellum. Altered blood in intestine.
K. A., 4, F.	Not given	Not given	General purpuric spots. Child fretful and drowsy. Much pain in limbs. Some epistaxis. Temp. 104°. Died a few hours after admission	No post-mortem examination.
E. K., 5 months, F.	Not given	Not given	Not given	Died shortly after admission. P.M.—Small hæmorrhages on buttocks and backs of thighs. A few hæmorrhages in lungs and colon. Much bronchitis. Pulmonary collapse.
L. E. V., 5, F.	Good	Has had winter coughs; otherwise healthy. Five days ago had pain in legs, followed by hæmorrhages	On legs and, to a less extent, on arms are marks like bruises. Puffy swelling in right popliteal space. Much bronchitis. Temp. normal.	Discharged relieved on the 3rd day.

TABLE X.—*Fatal Cases of Empyema.*

Initials, age, and sex.	Admitted.	Died.	History.	State on admission.	Treatment and progress.	Post-mortem examination.
W. J., 2, M.	Feb. 12	Feb. 15	2 or 3 attacks of bronchitis. Severe headache a month ago, followed by pain and swelling in left knee and abdomen. Extreme dyspnœa for a week	Great dyspnœa; signs of fluid on left side; heart displaced to right; abdomen distended, but no fluid detected. Temp. 101·8°. Old rickets	Soon after admission 5 ounces of sweet pus were withdrawn by trochar. Patient relieved, but vomiting set in. The temperature, except on admission, never rose above 100°. The patient was again tapped and 2½ ounces of pus removed, but he died exhausted a few hours later	P.M.—Acute pleurisy, with much fluid and plastic lymph on left side; lung quite collapsed. A little broncho-pneumonia on right side. Pericardium much thickened and œdematous. Sac filled with inflammatory fluid, and surfaces covered with lymph. Acute peritonitis, with some semi-purulent fluid. Brain normal. Left knee-joint healthy.
E. C., 34, M.	Feb. 10	Feb. 15	Father used to suffer much from cough. One cousin and wife died of phthisis. Cough since scarlet fever 18 months ago. A few days before admission cough became very severe; expectoration blood-stained; there was pain in right side and delirium	Pain in right side, and signs of fluid in the chest; expectoration viscid and blood-stained. Heart displaced to the left. Temp. 100°	40 ounces of fœtid pus were removed on the day of admission. Patient was again aspirated on the 13th, but only an ounce of very fœtid, blood-stained fluid removed. Much bronchitis, especially on left side. Moderate pyrexia throughout	P.M.—Right pleura full of thin, yellowish-grey, dirty pus, and also some fœtid gas. There was much lymph on both surfaces. The lung was quite collapsed, except at apex. In the lower and middle lobes there were numerous cavities, probably dilated bronchi. The pleura over one or two was gangrenous. There were one or two similar cavities at right apex, and there was early dry pleurisy over left lower lobe.
J. W. S., 19, M.	Dec. 21	Dec. 24	Went a voyage a year ago for his health. 1 week	Lying on right side with great dyspnœa. Signs of fluid in right pleura,	A portion of rib was excised antiseptically a few hours after admission, and a free exit made;	P.M.—Right lung collapsed. Two small cavities containing pus at base. Acute pericarditis, with

TABLE X.—*Fatal Cases of Empyema (continued).*

Initials, age, and sex.	Admitted.	Died.	History.	State on admission.	Treatment and progress.	Post-mortem examination.
			ago was tapped, and a pint of pus withdrawn from chest	and faint tubular breathing; crepitation at left base; pericardial friction. Liver felt below navel. Temp. 101°, pulse 148, respirations 42	6½ pints of pus were withdrawn. The patient was much relieved, and the temperature at once became normal, and remained so. Died on the 3rd day	recent adhesions. Left ventricle of heart hypertrophied; no valvular disease.
R. C., 5, F.	April 26	May 18	History of phthisis on father's side. Bronchitis 4 mos. ago. Cough and pain in left side for 3 weeks	Signs of fluid in left side of chest; some bronchitis. Respirations 52; temp. normal	On the day of death a fluctuating swelling was found about the nipple, and an incision was made, but no pus evacated. Patient died during the operation. Occasional slight pyrexia in the evening, but temperature usually normal	P.M.—Well-defined openings in the 1st, 3rd, and 5th intercostal spaces in left side, through which pus oozed. The pleural cavity contained about 40 ounces of thin pus. Incision made during life was only skin-deep. Pericardium, which was displaced to the right, lay vertically in the line of manubrium. Wall of pericardium much thickened. Recent intense inflammation of both surfaces. Left lung collapsed. No tubercles.
F. K., 24, F.	June 22	July 15	Father has winter cough, from which patient has also occasionally suffered. Cough, expectoration, and pain in right side for a month	Signs of fluid in right chest. Respirations 48; pulse 120, small; temp. 100°. Heart not displaced; systolic murmur at apex	On July 7th an ounce and a half of thick pus was withdrawn by aspirator. There was moderate pyrexia throughout. The cardiac bruit was transitory	P.M.—4 pints of pus in right pleural cavity. Lung collapsed; calcareous nodules at left apex. No pericarditis. 4 pints of serous fluid in abdomen. No peritonitis.

Table XI.—*Fatal Cases of Malignant Disease of Liver.*

Initials, age, and sex.	Admitted.	Died.	History.	Symptoms.	Treatment and progress.	Post-mortem examination.
R. W. C., 43, M.	Feb. 27	April 10	2 months ago had pain in right iliac region extending across abdomen, and began to emaciate. He was told shortly afterwards that his liver was enlarged. 2 weeks ago noticed a swelling beneath right zygoma, and another over right parietal eminence. Much vomiting for a month, and swelling of the right leg for the same time	Patient sallow and cachectic. A hard moveable tumour, the size of a large walnut, beneath right zygomatic arch; another tumour, hard, but not moveable, the size of a nut, on right parietal eminence; and a third, the size of a pea, to the left of umbilicus. Much œdema of right foot and leg. Some enlarged veins over front of chest and abdomen. Pleuritic friction on right side. Liver large and hard. Some albuminuria	The patient had a good deal of vomiting, emaciated rapidly, and had occasional delirium. The urine constantly contained a little albumen. There was a tendency to diarrhœa. Just before death there was much abdominal pain	P.M.—The tumours in the right parotid region, to the left of umbilicus and over right parietal eminence, were cystic, and contained thick brownish fluid. The small omentum, and parts about it on the under surface of liver, were transformed into a firm fibrous mass with cysts, which contained canary-coloured fluid. The mesentery was studded with minute new growths resembling tubercles. The liver showed cysts, of varying size, with light yellow fluid contents, and thick, well-defined walls. The diaphragm, which was adherent to liver, was much infiltrated with growths. There were several nodules in the heart. Two large branched calculi in left kidney. The growth was squamous epithelioma.
M. M., 40, M.	Mar. 19	April 20	3 months ago began to vomit, and had epigastric tenderness. 2 or 3 weeks later noticed a lump in	Patient sallow and emaciated. In epigastrium is a large, globular tumour, smooth, elastic, not very hard, not tender, and moving with respira-	March 31.—Some fluid detected in left pleura. Patient became gradually weaker. He was treated with iodide of potassium and injec-	P.M.—Liver, which was adherent to diaphragm, contained numerous large masses of white, firm new growth, most showing caseous spots, and some apparently becoming colloid. No enlarged glands in abdomen. A nodule of new growth in one

TABLE XI.—*Fatal Cases of Malignant Disease of Liver (continued).*

Initials, age, and sex.	Admitted.	Died.	History.	Symptoms.	Treatment and progress.	Post-mortem examination.
			the epigastrium, and shortly after the sickness stopped. Noticed a small lump under the angle of left jaw about a fortnight ago	tion. Liver much enlarged, reaching to crest of ilium. Enlarged veins over abdomen. No ascites. No jaundice. Moveable tumour, half the size of a hen's egg, beneath angle of left lower jaw	tions of morphia. An exploratory puncture was made into the tumour without definite result	kidney. Much serous fluid in left pleura. At root of left lung there was a large mass of infiltrated glands. One nodule in lower lobe. The growth was carcinomatous.
W. C., 52, M.	Nov. 7	Nov. 25	Pain in right side and vomiting came on 10 weeks ago and lasted a fortnight. Swelling of abdomen for a month. Jaundice for 2 weeks	Emaciated man; jaundiced all over. Abdomen distended. Some ascites. Liver felt below ribs; edge firm; no nodules. Mitral systolic murmur. Retention of urine	Nov. 10.—A pint of fluid, containing blood, removed from abdomen. The left leg became more swollen, and the patient got progressively weaker. There was occasional retention	P.M.—8 pints of serous fluid in abdomen. Mitral thickened and orifice narrowed. A large mass of glands, infiltrated with new growth in portal fissure, pressing on the hepatic ducts. Gall-bladder contains numerous stones, and its walls, chiefly at the fundus, are infiltrated with growth, which passes some distance into liver itself. There are a few scattered nodules in liver, and the ducts are dilated. The growth was cylindrical epithelioma.
M. C., 71, F.	Aug. 13	Sept. 18	Pain on right side, with swelling in region of liver for a month. Has	A hard, smooth body felt in right epigastrium and right hypochondrium, moving with re-	Sept. 5.—Tumour larger, apparently filling up most of lumbar region. It is smooth and	P.M.—There was a large, white, hard tumour in right hypochondrium, about the size of a large orange, and situated in the right lobe of liver. The lump was adherent

			emaciated much during the same time	spiration and tender. Some resonance supposed to exist between the tumour and liver. No jaundice	notched to right of umbilicus. No resonance between tumour and liver. The growth seems to be fixed to lower ribs, and does not now move with respiration. There is constant nausea and occasional vomiting. Treatment consisted of quinine, iron, stimulants, and occasional aperients	to the parts around, and especially to the pylorus and duodenum, but these latter were not invaded. There were a few small nodules in the liver, immediately adjacent to the main growth. No obstruction of bile-ducts. No malignant disease elsewhere. The growth was scirrhus.
E. K., 71, F.	Oct. 25	Dec. 5	Pain in lower abdomen and loss of appetite for 2 months, following in a month by swelling of abdomen	Much ascites. Liver-edge not felt. Several small nodules in abdominal wall	Paracentesis performed shortly after admission. The edge of liver was felt 2 inches below costal arch. It was hard and seemed nodular. Oct. 30.—Urine smoky, containing blood and albumen $\frac{1}{8}$th. Nov. 29.—Paracentesis again performed. 11 pints of blood-stained fluid removed. Patient died exhausted	P.M.—Recent peritonitis. 7 pints of turbid fluid in abdomen. Great omentum contracted and bar-like, adherent to gall-bladder, but not infiltrated with growth. Wall of gall-bladder, midway between fundus and entrance of cystic duct, infiltrated with white, firm growth. Channel much narrowed, and mucous membrane invaded. On the right the gall-bladder is invaded by new growth, apparently arising in the liver. Large mass of affected glands in portul fissure. Several isolated nodules in liver substance. A large gall-stone, chiefly made up of cholesterine. Extensive infiltration of retro-peritoneal glands. Growth was cylindrical epithelioma.

Table XII.—*Fatal Cases of Tubercular Meningitis.*

Initials, age, and sex.	Admitted.	Died.	History.	Symptoms.	Treatment and progress.	Post-mortem examination.
C. V., 13, M.	July 21	July 26	Two maternal uncles died of phthisis. Had infantile convulsions up to the age of 7. Had much headache 5 months ago and a fit in which he was insensible for 2 hours. Sight has been dim since. Constant vomiting and headache for 4 days	Head retracted, occasionally moved from side to side; much photophobia. Paroxysmal headache; quite sensible. No discharge from ear; no paralysis. Pupils normal. Occasional grinding of teeth. Respiration irregular. Temp. 99°. Pulse full and regular. Trace of albumen	July 23.—Was ordered iodide and bromide of potassium, and icebag to head. July 24.—Had a fit, in which the hands and right side of face twitched. Since then moves chiefly his left hand, is apathethic, and will not answer questions. July 25. — Uses right hand now. Leeches to the temples and a blister behind each ear. Injection of morphia. July 26. — Quite unconscious. Evacuations passed involuntarily. Crepitation over lungs. Moderate pyrexia throughout. Always resisted ophthalmoscopic examination	Much fluid in bronchi. Right lung semi-solid at base; patch of broncho-pneumonia and scattered bodies like tubercles in upper lobe. Surface of brain much congested; convolutions flattened; membranes at base thickened. Adhesions between opposite sides of fissures of Sylvius and between two frontal lobes. Some doubtful tubercles about division of the internal carotids. No recent lymph. A little fluid in ventricles. Brain generally rather soft. A very small caseous mass, about the size of a tare, in anterior extremity of right half of cerebellum.
W. B., 6, M.	July 25	Aug. 4	One sister died in infancy of bronchitis. Liable to headache since birth, but no fits. During the last week headache has been worse; has vomited and has been drowsy	Emaciated child; very restless. Head constantly rolled from side to side, and limbs tossed about. No paralysis. Pulse and respiration regular. Temp. 102°. Urine passed in bed. Abdomen retracted; no diarrhœa. Grinds his teeth. Pupils dilated, but normal. No photophobia. Inclined to be drowsy at times	July 27.—Double optic neuritis. July 30.—Almost unconscious; does not move. Swallows food. No vomiting; no diarrhœa. Moderate pyrexia throughout	Convolutions flattened, surface dry. Much lymph at base, obscuring the nerves, and in the fissures of Sylvius. Numerous grey tubercles along middle cerebral arteries. Brain substance very soft and pulpy. Ventricles much distended by serous fluid. No disease of bones of skull. Scattered tubercles in lungs.

H. H., 7 mos., M.	Aug. 9	Aug. 12	Family history of phthisis. Several fits 3 weeks ago, but seemed well afterwards. Ten days ago had a fit, after which he was insensible for 5 days. Has had occasional fits since and some vomiting	Almost unconscious; no vomiting; no diarrhœa. Abdomen distended. Heart's action regular. Pupils normal. No rickets. Some cough, but nothing found in lungs. Temp. 99·4°	Temperature on the 10th rose to 104·4° in the evening, and on the eleventh to 105·4°	Body very fat. Convolutions flattened, surface dry and sticking. Brain substance very soft. Much lymph at base of brain in sub-arachnoid space and along vessels. Numerous tubercles along vessels of pia mater, some being found at vertex. Ventricles much distended by serous fluid.
T. S., 32, M.	Nov. 23	Dec. 2	Mother died of some lung affection. Patient had rheumatism in the joints 16 months ago. 3 months ago was treated in the hospital for left pleuritic effusion, and a month later was readmitted for right pleuritic effusion. 1 week before admission he began to have headache and giddiness, and later became strange in his manner	Complains of pain in forehead; no cough. Fine crepitation in left axilla. No signs of paralysis noted. Temp. 100°. Feels sick	Nov. 25. — Very sleepy, but answers questions. Headache persists. Continually jerks about in bed. Three leeches applied to left temple. Nov. 26.—Drowsy and apathetic; does not answer. Some signs of right facial paralysis and left hemiplegia. Sensibility seems impaired on right side. Nov. 27.—Answers when spoken to. No obvious paralysis. Six leeches applied to temples. Pot. Bromid., gr. xv, t. d. Nov. 28.—Very noisy in the night, but fairly sensible in the morning; no paralysis. Left pupil larger than right. Nov. 30.—Quieter. Urine had to be drawn off. Answers rationally. Icebag to head. Dec. 1.—Some photophobia; no optic neuritis. Lies on right side; is continually chattering. Patient became suddenly unconscious, but had no convulsions and no paralysis. Moderate pyrexia throughout	Recent pleurisy on left side. and thirty ounces of turbid fluid in cavity. Comparatively recent pleurisy on left side. Numerous miliary tubercles on parietal layers. Tubercles on both lungs and two small caseous masses on right lower lobe. Convex surface of brain sticky. Edges of fissures of Sylvius adherent, and miliary tubercles in course of middle cerebral arteries. Anterior half of pons, crura cerebri, and chiasma covered with thick œdematous lymph. Both third nerves and the right facial and auditory compressed. Much fluid at base and in ventricles; the latter were distended and their walls softened.

TABLE XII.—*Fatal Cases of Tubercular Meningitis (continued).*

Initials, age, and sex.	Admitted.	Died.	History.	Symptoms.	Treatment and progress.	Post-mortem examination.
R. C., 9, F.	April 9	April 11	Spinal curvature since a fall when æt. 2½. Discharge from right ear for 2 weeks. Has had much vomiting. A fit 2 days before admission and another next day	Very irritable; utters an occasional sharp cry; no vomiting. Paralysis of both external recti and of right superior rectus, with slight ptosis. Pupils dilated, right most. Temp. 102·2°	April 1.—Six leeches applied behind right ear. Complains of headache. No paralysis of face or limbs. Urine drawn off. April 11. — *Tâches cérébrales.* Comatose; breathing stertorous. Limbs cold; pulse small. Moderate pyrexia for the first two days	No disease of bones seen on surface. Convolutions flattened; pia mater congested. Not much subarachnoid fluid. Membranes at base over pons, medulla, and along fissures of Sylvius, thickened, congested, and, in the last situation, adherent; they were a little rough to the touch, and thinly studded with tubercles. Fornix softened; ventricles not distended. The third, fourth, and sixth nerves seem quite healthy. Extensive caries of sacrum and double psoas abscess.
K. R., 21, F.	Nov. 8	Nov. 9	4 days before admission returned home dull, stupid, and was supposed to be under the influence of drink. 2 days ago had a fainting fit, to which she is subject. Unconscious all next day	Groaning much and unconscious. Moves her limbs restlessly about. No evident paralysis. Limbs occasionally rigid. Temp. 102·4°	Patient had fifty-two epileptic fits, chiefly affecting the left side, in about twenty-four hours. Temperature high throughout	Veins over right side of brain much fuller than on left. No excess of fluid. Much thickening of arachnoid at base, but no tubercles were visible and no recent lymph. No cortical disease. Pia mater everywhere very adherent. Edges of fissures of Sylvius glued firmly together. No obstruction of arteries. There were cavities in both lungs and numerous tubercles. There was extensive tubercular disease of intestines and of Fallopian tubes.

TABLE XIII.—*Fatal Cases of Cerebral Tumour.*

Initials, age, and sex.	Admitted.	Died.	History.	Symptoms.	Progress.	Post-mortem examination.
D. L., 16, M.	Nov. 29	Jan. 1	Severe head injury 6 months ago. Vomiting for 3 or 4 mos., followed by staggering gait, headache, and defective vision	Vertical headache; double optic neuritis; weakness of internal recti and occasional diplopia; some vomiting; slight *tâches cérébrales*. Gait "peculiar," but its character not specially noted	There was much vomiting and headache. The pupils were generally equal, but once right was smaller than left. There was some photophobia. The tongue was usually protruded to the right. There was no paralysis of face or limbs. He became more and more drowsy, and towards the end passed his evacuations under him	Soft greyish tumour, the size of a hazel nut, in left hemisphere of cerebellum. Another large tumour in middle lobe, extending into the lateral parts and involving the floor of the fourth ventricle. Meningitis at base. No pressure on third nerves. Well-marked descending neuritis of optic nerves.
W. F., 10, M.	Dec. 12	March 8	Headache and vomiting for 6 mos.	Paroxysmal headache and vomiting. Well marked double optic neuritis. No squint; no paralysis; no tremors. Nothing special in gait	Occasional attacks of unconsciousness. No paralysis was noted. Headache, vomiting, and giddiness almost constant. The day before death had a fit, in which the limbs became rigid and the head retracted	No meningitis. Much distension of ventricles. Sheath of optic nerves much distended with serum. Symmetrical tumours in the superficial part of each lateral lobe of cerebellum posteriorly and adherent to the dura mater. The tumours were tubercular. No miliary tubercles anywhere.

TABLE XIII.—*Fatal Cases of Cerebral Tumour (continued).*

Initials, age, and sex.	Admitted.	Died.	History.	Symptoms.	Progress.	Post-mortem examination.
W. B., 14, M.	May 12	May 18	Has had earache and discharge from left ear, giddiness, and vomiting for 5 mos. Abscesses in various parts for 3 mos. Headache for 6 weeks. No fits	Several fluctuating swellings on limbs. Paroxysmal headache, double optic neuritis, no paralysis. Can walk a little	The headache continued very severe and paroxysmal. On one occasion the pulse and respiration were irregular and there was general hyperæsthesia. Some weakness on left side of face, but no other paralysis. No note of vomiting	Thickening of arachnoid at base, but no recent lymph. Numerous tubercles in pia mater in fissures of Sylvius. A tubercular mass, the size of a cherry-stone, in left tempero-sphenoidal lobe. Two smaller tumours in left præ-frontal lobe. Three or four growths in left centrum ovale magus, and one in the cortex of the first frontal convolution in right side. There was also a tubercular mass in each lobe of cerebellum. There was an abscess of left forearm and one of left leg. Abundant evidence of tubercle in other organs.
P. M., 4, M.	June 4	June 14	Vomiting for 3 or 4 months. A fit about 2 mos. ago, and a second a month later. The left side was chiefly convulsed. After the latter fit there was loss of power in left arm	Quite unconscious; conjunctivæ insensible. Pupils normal; double optic neuritis. Arms and legs much wasted, the former at times rigid. Thumbs turned in, legs flexed and drawn up. Knee-jerks brisk. Sensation blunted, but not absent. Crepitation at both apices	Later it was noticed that the head was turned to the right, that there was marked convergence of eyes, that the left arm was sometimes flaccid and paralysed, but occasionally rigid, and that the legs were usually drawn up. The respirations and pulse became irregular towards the end, the eyes occasionally showed con-	A few grey tubercles at vertex. Edges of inter-hemispherical fissure adherent in front as are also the edges of the fissures of Sylvius. Numerous grey tubercles in course of middle cerebral arteries. Membranes in the interpeduncular space thick and opaque. Numerous tubercles about olfactory nerves, which are bound down to surface of brain. Six tubercular masses in brain: one in cortex and underlying white matter of median aspect of right ascending convolution, one in first frontal convolution on left side, one in corresponding position on right side, one about half an inch in front of the last, but on median aspect, and two in right occi-

					jugate deviation to the right, and there was evident left hemiplegia and rigidity	pital lobe. Signs of phthisis in both upper lobes, and a large caseous mass in one kidney.
T. S., 4, M.	May 29	July 24	Stammering for 6 mos. Head injury 3 weeks ago, followed by pains in head and neck, vomiting, drowsiness and staggering gait	Cries continually. Much occipital headache. Understands imperfectly. Speech stammering. Quite blind; double optic neuritis; no oculomotor paralysis. Can neither stand nor walk. No paralysis of arms	He became very drowsy, passed his evacuations into the bed, and vomited at times. The pulse and respirations were irregular. There was occasionally marked but temporary improvement	Brain very soft; ventricles much distended. In under surface of middle of cerebellum was a spherical brain-like tumour, the size of a walnut, pressing somewhat on medulla oblongata.
G. H., 60, M.	Oct. 11	Nov. 1	Family history of phthisis. A fall 6 weeks ago, followed by pain in back, loss of control over bladder, and difficulty in walking. Loss of power in right arm and leg for 3 days. Defect of speech for 2 weeks	Patient has marked right hemiplegia and aphasia. Sensation deficient on right side. No optic neuritis	He soon became absolutely speechless and did not seem to understand when spoken to. The right side became rigid and tremulous, and the left side also though to a less extent. For some days before death the eyes remained turned to the left	The post-mortem examination was made outside the hospital. A tumour was found in the left cerebral hemisphere, but no further information can be given.
A. C., 2, F.	July 6	July 19	Irritable and drowsy for some months. Vomiting, screaming, headache, and inability to stand for 5 days	Very drowsy and fretful. No vomiting on admission	No optic neuritis was found. There was irregular pulse. Once some twitching of the left side of the face was observed, but no definite convulsive attack. No paralysis	A tubercular mass, the size of a small cherry, in anterior extremity of left optic thalamus, a second, the size of a pea, in anterior part of internal capsule, and a third, the size of a cherry, at posterior extremity of inferior vermiform process of cerebellum. Grey tubercles at base, but no lymph.

TABLE XIII.—*Fatal Cases of Cerebral Tumour (continued).*

Initials, age, and sex.	Admitted.	Died.	History.	Symptoms.	Progress.	Post-mortem examination.
F. M., 25, F.	June 13	Aug. 5	Vertical headache, giddiness, vomiting, and blindness for a year	Intelligent. Is giddy when upright. No fits. No paralysis. No defect of sensation. Walks on the heels and tends to fall backwards and to the right. Nearly blind; double optic neuritis	She had delusions at times. There was much drowsiness, occasional vomiting, and headache. Evacuations passed into the bed. Before death there was evident left hemiplegia and some weakness of right arm. No fits	A soft, pinkish, lobulated, and apparently vascular growth, measuring four and a half inches long and three and a half laterally, springing from surface of right corpus striatum and anterior part of right optic thalamus. About a quarter of the bulk of the growth was situated to the left of the mesial line.
M. W., 47, F.	Sept. 15	Sept. 22	Pains in the head for 3 weeks. Has had no vomiting	Only partly conscious. Loss of power in both arms and legs. Left arm semi-flexed, weaker than right. More paralysis of left than of right leg. No loss of sensation. Rhythmical movements of right hand	The eyes were kept persistently closed and she was roused with difficulty. Pupils sometimes equal, at other times right smaller than left. No optic neuritis. Evacuations passed unconsciously	A tumour, the size of a large cherry, in right centrum ovale magus, outside the posterior extremity of optic thalamus. The tumour was soft and gelatinous, especially in the centre, and there were some small hæmorrhages within and around it. In the white matter immediately above was another similar but smaller tumour. The right optic thalamus was infiltrated with soft, pinkish growth. There was a smooth-walled cyst, with straw-coloured contents and some gelatinous matter, running lengthwise in right temporo-sphenoidal and occipital lobes.

SPECIAL ANALYSES AND ABSTRACTS.

I.—RÖTHELN FOLLOWED BY MEASLES.

A. C—, female, æt. 4, was admitted on May 18th, for headache and cough. There were coarse gurgling sounds over both lungs, but no dulness; temp. 102°; pulse 120, full; respirations 32.

On May 21st the patient was covered with a pinkish, elevated, papular, and in parts slightly crescentic rash. Fauces slightly congested; no coryza. Temp. a.m. 100·4°, p.m. 97·6° On the 25th the eruption had quite disappeared, but the bronchitis persisted. Between May 21st and May 29th, the temperature still rose occasionally, the highest being 101·3°, but was often normal or subnormal. On May 30th the temperature was 103·8°, and on June 3rd there was an abundant measly rash, the conjunctivæ were congested, but there was no sneezing. The temperature was high on the 3rd and 4th of June, varying between 103° and 105°. The cough was severe, and there was some delirium at night. Patient was convalescent on June 7th, four days after the appearance of the measly rash, and was discharged cured on June 15th.

On June 8th a patient in the ward was attacked with rötheln, and on the 21st another developed measles.

Both made rapid recoveries.

II.—DIPHTHERIA FATAL FROM CARDIAC PARALYSIS.

A. B—, female, æt. 6. Admitted January 31st. Both tonsils, the uvula, and back of pharynx were covered with membrane. There was some bronchitis and occasional epistaxis, and albuminuria. The patient seemed to be progressing favorably until February 15th, when she had an epileptiform fit. In the succeeding twenty-four hours she had ten similar attacks, and was at times slightly delirious. Afterwards it was noticed that fluid was returned through the nose. The temperature was normal. The pulse became extremely feeble, very slow (32), and irregular. The fauces were red, but the membrane had cleared off.

Patient died on February 17th.

Post-mortem.—A shred of membrane on right vocal cord, and two or three

minute pieces on mucous membrane of trachea; lungs normal. Some swelling of cortex of kidneys. Brain, medulla oblongata, spinal cord, vagi and cardiac plexus normal to naked eye.

III.—GOUT AND CHRONIC RENAL DISEASE.

A. H—, æt. 21, a waterman, was admitted on July 24th. His father had his first attack of gout three years ago. About two years before admission the patient had pains in the feet lasting three days, but it is doubtful whether this was a genuine attack of gout. He had never had scarlet fever. Ten months ago he was in the hospital for acute nephritis, and he stated that two years previously he had had a similar attack.

On February 6th, 1883, he was admitted for albuminuria, evidently dependent on chronic renal disease, and on March 7th was discharged relieved.

He was readmitted on July 24th, and died on August 14th.

The urine contained much albumen, and there were granular and hyaline casts.

Post-mortem.—Lymph over left lower lobe; both lungs very œdematous. Heart greatly enlarged, but no structural change in valves. Kidneys large and pale; capsule easily separable; cortex large, opaque, red, and in parts mottled yellow. The disease appeared to be tubular nephritis. Considerable deposit of urate of soda both inside and outside great toe-joints. None seen in knees.

IV.—PERNICIOUS ANÆMIA.

S. S—, female, æt. 35, admitted May 2nd. Had diphtheria seven years ago. Had piles six months ago, when she passed some red blood. Slight epistaxis two weeks ago. Pains in the chest, shortness of breath, and night sweats for two months.

The patient, who was very pale, complained of pains in the back and chest, and of shortness of breath. There was a little œdema of legs. A systolic bruit was audible at apex and at left base.

There were numerous hæmorrhages around the optic discs. The total number of blood-corpuscles was diminished, the blood generally was pale, the white cells diminished in number but otherwise normal, the red cells few and varying much in size, the rouleaux imperfectly formed.

She passed small quantities of blood by the rectum three or four times and had a slight attack of epistaxis. There was slight albuminuria and much vomiting. There was moderate pyrexia, except on the day before death, when the temperature was 95° p.m.

Post-mortem.—Hæmorrhage on trunk and front of forearms, on right pleura, on surface of heart, on peritoneal aspect of stomach, on retinæ, on surface of brain, in œsophagus, stomach, and intestines. Behind the tail of pancreas was a small serous cyst. The heart and liver appeared fatty.

V.—GENERAL TUBERCULOSIS.

P. D—, æt. 3, male, admitted December 12th, 1882. No history. Child anæmic and wasted. Some cough; respiration harsh all over, rhonchi and crepitations behind. Abdomen distended. Wrist and ankle-joint ends large. Occasional rise of temperature.

Died January 6th, 1883.

Post-mortem.—Thickening of the ends of all the long bones. Marked beading of ribs. Chronic peritonitis with tubercles. Grey granulations in pleuræ, lungs, liver, and kidneys. Bronchial and abdominal glands caseus. A small cavity in left lung.

H. O—, æt. 14, male, admitted January 11th. Was in the hospital four and a half years ago for supposed typhoid fever. Since than he has had diarrhœa. An anæmic child. Œdema of face and legs. Crepitation at both apices. Abdomen swollen and tender, contains a little fluid. Liver enlarged. Frequent pale, liquid, offensive stools. No albuminuria. Temperature on admission 100·6°. Before death, which occurred on March 1st, he had severe aphthous stomatitis.

Post-mortem.—Grey tubercles in lungs, but no cavity and no consolidation. Tubercles also in liver, kidneys, peritoneum, and spleen. Mesenteric glands very large and caseous. There were four ulcers of small intestine and one of large intestine a few inches above cœcum, which had produced extreme narrowing of the gut. There was no naked-eye evidence of tubercle.

G. F—, æt. 7, male, admitted February 8th. Father phthisical. A fortnight before admission was atacked with general pains and slight cough. A pale child, but fairly nourished. Temperature normal. A few crepitations over front and back of lungs. Bladder distended, but nothing else abnormal found in abdomen. Later there was delirium, abdominal pain, sickness, and severe diarrhœa. The temperature was intermittent. There was rapid emaciation.

Died March 11th.

Post-mortem.—Recent right pleurisy. Grey and yellow tubercles on both pleuræ. Scattered tubercles of both lungs and some collapse, but no cavity and no broncho-pneumonia. Glands in portal fissure large and yellowish white, but not caseous. Grey and yellow tubercles on liver, spleen, and kidneys. Nodules, apparently tubercular, embedded in wall of small intestine. A few small ulcers in small intestine and beginning of large intestine. Two or three tubercular nodules in cortex of convex surface of brain, extensive tubercular infiltration of pia mater in fissures of Sylvius, but no meningitis; softening and yellow discolouration of the fore part of right temporo-sphenoidal lobe, and of tip of left occipital lobe. Bronchial and abdominal glands large and yellowish white, the former being a little caseous.

W. M—, æt. 8, male, admitted July 16th. No certain history of phthisis in family. Rheumatic fever three months ago, since which he has been ailing. Has complained of headache, and there has been some weakness on the right side. Occasional vomiting for a fortnight. On admission there was double optic neuritis; *tâches cérébrales* were well marked, and there was some headache. Temp. 99·8°. No paralysis. Evacuations were passed in bed a few days after admission. Two days before death had a series of fits, chiefly affecting the right side. Afterwards

he was unconscious, and the pulse and respirations became irregular. Temperature slightly above the normal, except for the two days preceding death, when once it was as low as 95·2°.

Died on July 23rd.

Post-mortem.—Grey tubercles on convexity of brain and in fissures of Sylvius. In the former position there were some small yellow tubercles. Ventricles distended with serum, and white matter around softened. Miliary tubercles in mesentery, pleuræ, and lungs. Extensive consolidation at right apex, and a few recent cavities in both lungs. Yellow tubercle in mesenteric glands, spleen, and liver.

A. H—, æt. 33, female, admitted April 7th. Has been a heavy drinker. Pains in the head, twitching of face and hands, and occasional attacks of unconsciousness, said to be epilepsy, for four months. Lost the use of her legs ten days since. A week ago noticed swelling of abdomen and legs. On admission there was œdema of legs, but no obvious ascitis. The legs seemed quite paralysed, and the patellar reflex was absent. She soon became noisy and delirious. Temp. 99·4°. Later there was the reaction of degeneration on the legs. The arms became weak, sensation was delayed in the limbs, and there was a zone of hyperæsthesia at lower part of chest. Slight pyrexia throughout.

Died on April 15th.

Post-mortem.—Tubercles on under surface of diaphragm, in pleuræ, lungs, spleen, and kidneys; ulceration of intestines; cirrhosis of liver; no obvious change in spinal cord. Nervous system examined microscopically, but no decided lesion found.

J. G—, æt. 8, female, admitted November 7th. Marked family history of phthisis. Headache, vomiting, and feverishness for ten days. On admission she complained of headache, there was early optic neuritis, and the temperature was 102·4°, and two days later there appeared to be weakness of the right side of face and right arm. Moderate fever throughout.

Died on November 15th.

Post-mortem.—Grey tubercles in pleuræ, lungs, liver, kidneys, and spleen; tubercular meningitis at base.

VI.—THROMBOSIS OF PORTAL VEIN.

J. D—, æt. 19, female, admitted June 13th. Patient is said to have had repeated attacks of vomiting of blood since she was two years old. A fortnight before admission she brought up a pint of blood, and since then she has vomited blood three times. On admission she was very pale. A systolic murmur was heard all over cardiac region, and also below angle of left scapula some tenderness in epigastrium. The vomiting of blood persisted, and the patient died on June 20th. The temperature was slightly above normal throughout.

Post-mortem.—Recent local peritonitis over duodenum and upper part of jejunum. Œsophagus, stomach, and first two feet of small intestine distended with blood-stained fluid. Walls of duodenum and upper part of jejunum much thickened and blood stained, the vessels of mesentery being filled with dark

soft clot. Trunk of portal vein filled with black clot, partially discoloured in centre, but not adherent to the walls. In the right branch the centre of the clot contained pus-like fluid, and in the left the coagulum was firmer and adherent in parts. Spleen very large and firm; no ulcer of stomach; veins at lower end of œsophagus a good deal dilated, but not ruptured.

VII.—ADDISON'S DISEASE.

Fatal Case.

J. G—, æt. 35, female, admitted December 14th. Weakness for about a year; darkening of the face for six months; vomiting for about three months. Very prostrate and disinclined for exertion. Uniform bronzing of face; marked pigmentation on extensor surfaces of limbs; axillæ and mammary areolæ comparatively little affected; some patches on lips, tongue, palate, and inner surface of cheeks. No sign of phthisis. No tenderness over situation of suprarenals. No caries of vertebræ detected.

Died on December 17th.

Post-mortem.—Nymphæ much pigmented. Lungs normal. No disease of spine. Suprarenals thick, nodular, and hard.

VIII.—ACUTE ENTERITIS AND PERITONITIS.

Fatal Case.

S. W—, æt. 36, female, admitted June 15th. Acute rheumatism fourteen years ago. Severe vomiting and purging with abdominal pain a fortnight ago, after taking pennyroyal and steel pills. Abdominal pain became worse five days ago, and she passed some dark blood by stool. On admission abdomen was much distended and tender. Bowels constipated; fæcal vomiting. Some fæcal matter was passed a few times after enemata, but she died on June 20th.

Post-mortem.—Abdomen contained seven pints of blood-stained serum. Local and acute peritonitis over after part of small intestines, the walls of which were greatly congested and thickened. The vessels were filled with dark, rather firm clot. No sign of vulvulus, hernia, &c., or any cause of internal strangulation. Numerous vegetations on auricular aspect of mitral valve. An infarct in spleen and one in right lung.

IX.—PERFORATION OF VERMIFORM APPENDIX.

F. B—, æt. 22, female, admitted November 27th. Eleven days before admission was suddenly seized with sharp pains in abdomen, which soon became tender and swollen. Has had constant diarrhœa. Abdomen distended all over and tender, especially in right iliac region. Bowels much relaxed, stools liquid and dark brown, but containing no blood. Temperature often normal; highest 102·6° on admission.

Died on December 3rd.

Post-mortem.—Abdomen contained two or three pints of rather fœtid pus; fairly recent peritonitis. Collection of pus about cæcum. There was an opening in the vermiform appendix close to the cæcum, but no disease of the coats could be discovered. Left empyema and acute pericarditis.

X.—CIRRHOSIS OF LIVER.

Fatal Cases.

One case in which there was no post-mortem examination is not included.

W. S—, æt. 50, male, admitted November 6th. Mother suffered from lung disease. Was healthy until four months ago, when he began to cough. Two months later the abdomen was noticed to be larger. Much ascites; liver apparently small. Prolonged expiration at apices. Later on he had several attacks of hæmoptysis, and crepitations were heard at both apices. There was occasional slight pyrexia.

Died on January 3rd.

Post-mortem—Miliary tubercles in both lungs; right solid at apex, and containing a small cavity. Left pleurisy with much effusion. Much fluid in abdomen; chronic peritonitis; advanced atrophic cirrhosis.

J. H—, æt. 42, male, admitted July 16th. History of spirit drinking, morning vomiting, hæmatemesis, and epistaxis. Slightly jaundiced. Bleeding from gums and mouth. Much ascites; liver dulness begins at fourth rib and reaches to margin of ribs; spleen large. Mitral systolic murmur. Crepitation at bases of lungs. Much œdema of legs. A little albuminuria. Temperature normal or subnormal.

Died August 14th.

Post-mortem.—Much jaundice; general dropsy. No peritonitis. Much thickening about bile-ducts in portal fissure. Liver very cirrhotic; spleen large. Lungs œdematous. Heart large and mitral slightly thickened. Kidneys large, but apparently normal.

T. G—, æt. 61, male, admitted May 5th. Says he has not been a hard drinker. Swelling of abdomen for four weeks. On admission there was much ascites. Liver dulness diminished. Much cough; rhonchi over both lungs. No jaundice

Died October 11th.

Post-mortem.—Much ascites, general peritonitis with some lymph. Liver small, "hob-nail;" gall-bladder filled with stones. Spleen very large. Early pneumonia of right upper lobe.

H. P—, æt. 11, male, admitted August 24th. Swelling of abdomen for two weeks. On admission there was ascites and œdema of legs. Liver not well defined. No albuminuria. Later he had an attack of epistaxis.

Died October 18th.

Post-mortem.—Abdomen contained six pints of serum stained with blood; vessels of peritoneum injected. Liver in advanced stage of atrophic cirrhosis. Spleen very large.

F. S—, æt. 46, female, admitted April 6th. Mother and two sisters died of phthisis. Patient is liable to cough. Much ascites and œdema. Liver apparently

normal. Slight albuminuria. Nothing abnormal detected in lungs. Moderate fever throughout.

Died May 17th.

Post-mortem.—Much fluid in abdomen with lymph; tubercles in lungs and peritoneum. Liver cirrhosed. Spleen large. Kidney hyperæmic.

XI.—OBSTRUCTIVE JAUNDICE.

Fatal Case.

M. E—, æt. 68, female, admitted July 17th. Jaundice and emaciation for seven months. On admission she was very yellow. The liver was enlarged, and a distended gall-bladder was felt. Urine contained bile acids and pigment. Stools pale. Occasionally the gall-bladder could not be felt. The temperature was usually normal or slightly subnormal, but she had a rigor twice and then the temperature rose 2° or 3°. A carbuncle formed over the sacrum, and the temporary pyrexia was probably dependent on that. The bowels were usually relaxed and always devoid of bile.

Died on November 17th.

Post-mortem.—Gall-bladder very large and its walls thickened. It contained about an ounce of dark green liquid bile. The right and left hepatic ducts and the common duct were much distended with bile. The latter and the pancreatic duct entered into the duodenum by a common orifice. This opening was obstructed by a partially healed duodenal ulcer, about the size of a threepenny piece. A probe could not be passed along the cystic duct, but bile could be squeezed through it from the gall-bladder. Liver large and bile-stained. Pancreas large and firm, and its duct much dilated.

XII.—MALIGNANT DISEASE OF PANCREAS.

Fatal Cases.

W. B—, æt. 57, male, admitted April 28th. Epigastric pain and vomiting for four months. There was very severe epigastric pain, occurring in paroxysms. When first seen he was slightly jaundiced, but soon became extremely yellow. He emaciated rapidly before admission, but not so rapidly whilst under observation. A few subcutaneous nodules below ensiform cartilage were noticed shortly before his death, which occurred on June 18th.

Post-mortem.—In the position of pancreas was a mass of soft, vascular, juicy new growth, in which small pieces of gland tissue could be distinguished. Both the bile-duct and the pancreatic duct ran through the growth. Gall-bladder and bile-ducts dilated. There was also extreme infiltration of the bronchial glands.

A. H—, æt. 59, female, admitted January 10th. Sharp abdominal pains, occasional sickness and emaciation for about six months. Much jaundice and ascitis. Epigastric pain. A nodule in abdominal wall. Towards the end the vomiting became excessive, and she rapidly lost strength.

Died on January 30th.

Post-mortem.—Much fluid in abdomen. Much distension of bile-ducts and gall-bladder. A large mass of new growth, apparently scirrhus, occupied the position of the pancreas. Small portions of the latter were seen on the surface of the tumour. The bile-ducts and vessels were compressed.

XIII.—CHRONIC NEPHRITIS.

Fatal Cases.

Eight cases, in which there was no post-mortem examination, are not included.

S. S—, male, æt. 22, compositor, admitted August 16th, 1882. Scarlet fever fifteen years ago, not followed by dropsy. Swelling of legs for a month. General œdema. Much albumen, granular and hyaline casts, and uric acid crystals. After puncturing the legs the skin became red and rapidly sloughed.

Died on February 3rd.

Post-mortem.—Fluid in both pleuræ, more in left. Left ventricle a little hypertrophied. Kidneys large, cortex swollen and opaque, details obscure, vessels congested, capsules non-adherent.

J. C—, æt. 75, male, died shortly after admission on February 12th. No clinical history.

Post-mortem.—Right kidney much atrophied, composed entirely of small cysts and containing a calculus. Ureter and pelvis small, but healthy. The left kidney of ordinary size, granular and cystic.

W. P—, æt. 36, male, admitted February 8th. No scarlet fever. Frequently exposed to wet and cold. Swelling of feet for three months. General œdema. Signs of fluid in left pleura. No evident ascites. Much albumen; granular, hyaline, and fatty casts, and a few blood-corpuscles.

Died on February 18th.

Post-mortem.—Cortex of kidneys pale, swollen, and mottled in parts; capsules non-adherent; arteries not thickened. Two pints of serous fluid in left pleura. Recent pleuro-pneumonia of left upper lobe, and consolidation along posterior border. Right upper lobe also granular and solid.

J. M—, æt. 53, gas-fitter, male, admitted March 20th. Gout three years ago. Vomiting of blood and diarrhœa three days ago. On admission he was very pale and tremulous. Arteries very rigid and tortuous. No albuminuria.

Died on March 25th.

Post-mortem.—Kidneys very irregular on surface. Capsules adherent, cortex atrophied. No hypertrophy of heart. Much blood in cæcum, ascending and transverse colon.

G. B—, æt. 36, male, admitted March 8th. Swelling of feet for two months. General œdema; much ascites; signs of fluid in pleuræ. Much albumen; epithelial, hyaline, and granular casts.

Died on April 18th.

Post-mortem.—A little fluid in each pleura; three pints in abdomen. Kidneys large, capsules non-adherent, surface smooth, cortex very large, opaque and mottled yellow. Gummata in liver.

T. M—, æt. 55, male, admitted May 1st. Giddiness for a fortnight. Admitted

unconscious, but without evident paralysis. Arteries thickened. Much albumen. Later he was found to have right hemiplegia and aphasia.

Died on May 10th.

Post-mortem.—Kidneys small, but capsules not adherent, cortex reduced to a mere line. Much blood in left lateral ventricle, and a little in right. Recent clot separated the caudate nucleus from the optic thalamus, which was much lacerated. The latter, as well as the lenticular nucleus and internal capsule was much ploughed up. Great hypertrophy of heart.

W. G—, æt. 65, male, died April 18th. No clinical history.

Post-mortem.—Kidneys granular and cystic; cortex firm, irregular, and narrowed. Slight cardiac hypertrophy.

W. R—, æt. 52, male, admitted May 18th. Dyspnœa, occasional vomiting and œdema of legs for two months. General dropsy. Heart enlarged, systolic murmur at apex. Arteries thickened. Much albumen. Bronchitis; signs of fluid in right pleura.

Died June 25th.

Post-mortem.—Five pints of fluid in right pleura. General hypertrophy of heart. Liver nutmeg. Kidneys very firm, capsules thickened and adherent, cortex slightly reduced.

I. H—, æt. 30, male, admitted June 28th. No scarlet fever. Occasional morning vomiting and diarrhœa. Legs swollen a year ago, but not so much as they are now. Much dyspnœa. Signs of bronchitis. No cardiac hypertrophy. Much albumen and granular cysts. Later there was only a trace of albumen.

Died July 20th.

Post-mortem.—Thirty ounces of fluid in right pleura, sixty ounces in abdomen. Much mucus in bronchi; advanced emphysema. Some cardiac hypertrophy. Liver nutmeg. Kidneys large, capsule adherent, surface granular.

H. C—, æt. 50, male, admitted June 28th. Attacks of gout for six years. Swelling of legs and cough for three weeks. General dropsy. Heart not enlarged, arteries thickened. Much albumen and casts. Occasional vomiting and diarrhœa. Much bronchitis; effusion into right pleura.

Died July 31st.

Post-mortem.—Much fluid in abdomen, a pint in right pleura; much bronchitis. Slight cardiac hypertrophy. Kidneys small and firm, capsule non-adherent, cortex pale, small and mottled.

G. H—, æt. 42, male, admitted August 20th. Pneumonia two or three years ago. Dropsy for fifteen days. On admission he was delirious, and there was a little albumen in the urine.

Died August 23rd.

Post-mortem.—General œdema of surface; no ascitis; effusion into both pleuræ. Left ventricle much hypertrophied. Kidneys small and red, capsule strips readily, but surface granular; cortex narrowed and firm.

S. S—, æt. 45, male, admitted July 30th. Dropsy for about four months. On admission there was œdema of legs. Signs of fluid in both pleuræ. Much albumen, but no casts found.

Died September 7th.

Post-mortem.—Much fluid in abdomen and pleuræ. Heart hypertrophied. Kidneys granular and contracted.

M. C—, æt. 39, male, admitted August 31st. Eight days before admission had a fit followed by loss of power on left side. Had a similar fit about three months ago. Patient nearly unconscious. Left arm and leg paralysed and apparently anæsthetic. No albumen. Temp. (five minutes after death) 109°.

Died August 31st.

Post-mortem.—Kidneys small, capsules adherent, cortex pale and much wasted. Slight hypertrophy of heart. Extensive recent hæmorrhage in right hemisphere.

F. C—. æt. 42, male, a painter, admitted August 13th. Has had colic, but not gout. Lately he has had epileptiform attacks. Heart large, no murmur. Moderate amount of albumen. Neuro-retinitis. Much delirium.

Died September 9th.

Post-mortem.—Much hypertrophy of left ventricle; recent infarcts in right lung. Kidneys granular and contracted; arteries thickened. There are four recent and three old hæmorrhages in the brain.

W. G—, æt. 72, male, admitted July 7th. Had dropsy nearly twenty years ago. Cough and swelling of legs for four weeks. General œdema. Heart's dulness normal. Much albumen, granular casts. Rhonchi over lungs, and crepitation at bases. Later there were signs of fluid in both pleura and in abdomen.

Died October 29th.

Post-mortem.—Abdomen contained three pints of fluid; slight peritonitis. Much fluid in pleuræ. General hypertrophy of heart. Cortex of kidneys large, details obscure, capsule slightly adherent, organ tough (probable chronic tubular nephritis with slight interstitial change).

T. N—, æt. 36, male, admitted November 8th. Acute rheumatism twelve years ago. Sickness and cough few weeks. Signs of bronchitis. Heart large; systolic murmur at apex. Moderate amount of albumen and granular casts. Much epistaxis. An epileptiform attack the day before death.

Post-mortem.—General hypertrophy of heart; mitral much thickened and contracted; aortic valves thick at the edges. Lungs emphysematous. Kidneys granular and contracted, containing a few cysts. No disease of brain. Blood in œsophagus and stomach.

C. H—, æt. 34, male, admitted November 26th. Acute rheumatism twice. Had dropsy two years ago. Swelling of abdomen and thighs two weeks ago. Passed blood by the bowel lately. Heart large; systolic murmur at apex. Much albumen, many granular and hyaline casts and some blood. Signs of fluid in right pleura and crepitation at left base. The day of death pericardial friction was heard.

Died December 7th.

Post-mortem.—Moderate anasarca. Recent general pericarditis; heart hypertrophied; no evident disease of valves, but mitral incompetent to water. Lower lobe of right lung in a state of red hepatisation, upper lobe grey, friable, containing much fluid. A small old cavity at apex. Left lower lobe partially solid. Kidneys small, smooth on surface; cortex narrow, pale, mottled, very firm.

C. B—, æt. 30, female, admitted January 31st. Scarlet fever followed by dropsy sixteen years ago. Much pain in right lumbar region. Heart large, mitral murmur. Pleuritic friction at right base, with dulness and feeble breathing. Had several epileptiform attacks, after one of which she immediately died (February 12th).

Post-mortem.—No recent pleurisy; right lung friable and semi-solid in dependent parts. General hypertrophy of heart, mitral valve much thickened and orifice extremely contracted. Brain fairly healthy. Left kidney very small and granular, capsule thickened, cortex mottled and obscure. Large perinephritic abscess on right side. Right kidney excessively atrophied, but fairly smooth on surface.

R. H—, æt. 44, female, admitted April 12th. Said to have had a similar attack to the present six years ago. Blood in the urine a month ago, since which she has frequently vomited. Urine smoky, very albuminous, containing blood-corpuscles and epithelial casts. Eyelids puffy, but no œdema elsewhere.

Died April 26th.

Post-mortem.—Kidneys very large, cortex increased, mottled pink, whitish, and red; very slight adhesion of capsule (chronic tubular nephritis). In the right parietal region there was a large extravasation of blood between the dura mater and the parietal layer of the arachnoid.

F. H—, æt. 39, female, admitted July 31st. Winter cough; severe hæmoptysis three months ago. General œdema. Signs of bronchitis, dulness at left base. Moderate amount of albumen.

Died August 7th.

Post-mortem.—Much œdema of lungs, a little fluid in left pleura. Great hypertrophy of left ventricle. Kidneys granular and contracted.

E. C—, æt. 53, female, admitted August 22nd. Pains in the head for about a month. Complains of headache and loss of power in right arm. Mitral systolic murmur. Much albumen.

Died August 28th.

Post-mortem.—Heart much enlarged, especially left ventricle, mitral valve thickened. Kidneys small and granular. Much degeneration of arteries. Large hæmorrhage into left hemisphere, but not opening into ventricles.

XIV.—APHASIA.

W. J—, æt. 53, male, admitted November 13th. Four years ago had a fit, during which he became pale, but did not lose consciousness. A month ago woke up "in a strange manner" and found he called things by their wrong names. Was not paralysed. On admission there was no paralysis of any kind. Converses rationally until asked the name of objects, when he hesitates and usually brings out the wrong word. For example, spectacles he called "large sight," eye, "fine," ink, "tink," finger, "fisture" or "thinger." There was no sign of any visceral disease.

Discharged on November 18th.

XV.—TETANY.

A. W—, æt. 2, male, admitted April 2nd. Bronchitis seven months ago; Another attack quite lately, when he had a convulsion followed by rigidity of the

hands and feet. On admission hands were flexed at wrist, fingers extended at phalangeal joints, thumbs turned in; feet also rigid and arched, big toes flexed and turned in. Rigidity disappeared during sleep. Bronchitic sounds all over chest. Some enlargement of wrists. Apparently there was general tenderness. Canines just coming through the gums. Slight fever at commencement.

Discharged cured April 23rd.

J. K—, æt. 1, male, admitted May 16th. History of syphilis in parents. Diarrhœa five weeks ago. Has had four fits, after the last of which the hands were noticed to be affected. On admission hands and feet had the characteristic attitude, and appeared tender. Wrists and ankles enlarged, and some beading of ribs. Gums were lanced to allow eruption of upper central incisors. Child had two convulsive attacks. Temp. normal. Discharged cured June 2nd. Was readmitted on October 29th. Six days ago, tetany was again noticed, but there had been no fits previously. Bowels have been loose, and the child feverish. The head was noticed to be large, and the anterior fontanelle widely open. Much sweating about head. Much diarrhœa. There was occasional convergent squint of both eyes, and also twitching about the mouth. Temperature usually 2° or 3° above normal in the evening.

Died November 12th.

Post-mortem.—Marked beading of ribs. Double pyelitis, suppurative fever in right kidney. All the other organs apparently healthy.

H. B—, æt. 34, male, admitted October 17th. Has been in India, where he had ague and dysentery. Pain in fingers three weeks ago, followed by spasm of hands and fingers. On admission the elbows, wrists, and metacarpal phalangeal joints were rigidly flexed, the palms of the hands were hollowed, the thumb flexed, and turned inwards under the fingers. Attempts at straightening the parts caused pain. The stools were loose and yellow. The tetany occurred in paroxysms, which could be induced in the arm by compression of the artery. Temperature normal.

Discharged cured October 30th.

SURGICAL REPORT.

1883.

By WILLIAM HENRY BATTLE, F.R.C.S.

General Statement.

Number of surgical beds 241

„ of patients in hospital January 1st, 1883 . 221 { Males 119 / Females 102

„ „ „ December 31st, 1883 223 { Males 125 / Females 98

„ „ treated to a termination during the year 1883 . 2555

	Total.		Males.		Females.
Discharged cured	1717	...	1061	...	656
„ relieved . . .	604	...	324	...	280
„ unrelieved . . .	57	...	30	...	27
Died	177	...	115	...	62
	2555	...	1530	...	1025

Average number of deaths 6·9 per cent.

„ „ days in hospital 30·9.

Table I.—*Abstract, showing Diseases, Injuries, &c., in*

Disease.	Sex.		Age.								Duration before admission.							
	M.	F.	Under 5	5–10	–20	–30	–40	–50	–60	Above 60	Dys. 1–4	Dys. 5–13	Wks 2–4	Mts. 1–2	Mts. 2–6	Mts 6–12	Chronic.	Not reported.
General Diseases.																		
Erysipelas (arising)	37	35	5	2	13	14	11	12	9	6	...	...	...	...	...	...	...	...
Do. (admitted as such)	37	25	5	2	6	14	10	14	5	6	51	8	3	...	...	...	...	...
Pyæmia (arising)	5	2	...	1	...	2	1	2	1	...	...	...	...	...	...	...	...	...
Do. (admitted as such)	2	3	1	1	1	...	1	...	1	...	...	2	1	1	1	...	...	...
Glanders	1	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...
Hydrophobia	...	1	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...
Syphilis—																		
Primary	2	3	...	...	2	3	...	...	...	...	...	...	1	4	...	...	...	...
Secondary	5	76	...	...	47	31	2	1	...	...	...	5	29	18	18	8	1	2
Tertiary	7	7	...	1	1	3	6	3	...	...	...	...	...	1	4	3	6	...
Hereditary	1	1	1	...	...	...	1	...	...	...	...	...	...	...	...	...	2	...
Struma	...	2	1	...	1	...	...	...	...	...	...	...	...	...	...	...	2	...
Rachitis	3	1	3	1	...	...	...	...	...	...	...	...	...	...	...	...	4	...
Local Diseases.																		
Tumours.																		
Carcinomata—																		
Scirrhus of—																		
a. Breast	...	24	...	...	...	1	3	10	7	3	...	...	...	...	7	8	9	...
b. Do. (recurrent)	...	4	...	...	...	...	...	2	1	1	...	...	...	...	3	1	...	...
c. Glands	...	2	...	...	...	...	...	1	1	...	...	...	...	...	...	...	2	...
d. Rectum	3	...	...	...	...	...	...	...	2	1	...	...	...	...	2	...	1	...
Epithelioma—																		
a. Tongue	11	...	...	...	...	...	2	3	2	4	...	...	...	...	7	3	1	...
b. Mouth	6	1	...	...	...	1	1	2	2	1	...	...	1	2	2	1	1	...
c. Lip	10	...	...	...	...	...	...	4	3	3	...	...	...	1	2	1	6	...
d. Cheek	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...
e. Gland	1	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...
f. Larynx	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
g. Generative organs	1	5	...	...	...	1	1	1	2	1	...	...	...	...	...	4	2	...
h. Digestive tract	5	1	...	...	...	...	2	2	...	2	...	...	...	...	1	3	2	...
Cylindroma—																		
Rectum	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...
Sarcomata—																		
a. Face	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...
b. Skull	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...
c. Jaw	2	2	...	...	...	...	...	1	2	1	...	...	...	...	2	...	2	...
d. Tonsil	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...
e. Abdominal wall	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...
f. Pelvic bones	1	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...
g. Upper extremity	...	2	...	...	2	...	...	...	...	...	...	...	...	...	...	...	2	...
h. Lower extremity	5	...	...	...	2	...	1	...	...	2	...	...	...	...	2	...	3	...
i. Breast	...	6	...	...	...	2	...	2	1	1	...	...	1	...	1	3	1	...
j. Lymphatic glands	3	1	...	...	1	1	...	1	1	...	...	...	...	1	1	2	...	...

Classes, according to authorised Nomenclature.

Duration of residence.									Result.				Remarks.
D s. 1–4	Dys. 5–13	Wks 2–4	Mts. 1–2	Mts 2–4	Mts. 4–6	Mts. 6–9	Mts. 9–12	Above a year.	C	R.	U.	D.	
...	1	16	22	18	7	5	3	...	56	...	...	16	See Special Table III—Erysipelas.
3	28	19	12	...	...	...	...	...	54	...	...	8	See General Summary.
...	1	4	1	1	...	...	...	...	...	...	...	7	See Special Table.
3	...	...	...	...	1	1	...	...	2	...	...	3	See Special Table.
...	...	1	...	...	...	...	...	...	...	...	...	1	Acute farcy.
1	...	...	...	...	...	...	...	...	...	...	...	1	Bite of a cat 4 months previously. See 'Lancet.'
...	...	4	...	...	1	...	...	...	4	1	...	...	See General Summary.
2	9	19	33	14	2	2	...	...	68	11	2	...	
...	2	5	4	1	1	...	1	...	11	3	...	...	1 doubtful case. ? lupus.
...	...	2	...	...	...	...	...	...	...	1	...	1	
...	...	...	...	...	1	...	...	1	...	1	...	1	
...	1	3	...	...	...	...	...	...	...	4	...	...	General.
2	5	5	9	3	...	...	...	...	15	5	1	3	Removal of disease 19.
...	...	3	1	...	...	...	...	...	4	...	...	...	Removal of disease 4.
...	...	...	...	...	...	...	...	. .	1	...	1	...	Removal of disease 1.
...	...	...	...	...	...	...	...	...	...	...	...	3	Colotomy 2.
...	4	7	...	...	...	...	...	..	2	5	2	2	Broncho-pneumonia 1, erysipelas 1.
...	1	3	3	...	...	...	...	...	1	5	...	1	D., female, involving floor of mouth and glands.
...	6	2	1	1	...	...	...	...	8	1	...	1	D. involving lip, angle of jaw and glands.
...	...	1	...	...	...	...	...	...	1	...	...	...	
...	...	1	...	...	...	...	...	..	1	...	...	...	Submaxillary, secondary.
...	...	...	1	...	..	...	...	...	...	1	...	...	Tracheotomy.
...	2	2	...	2	...	...	...	...	1	3	1	1	Fatal after removal of uterus.
1	2	...	2	...	1	...	...	...	...	3	...	3	Œsophagus 4, rectum 2.
...	...	...	...	1	...	...	...	...	...	1	...	...	Also with polypi of rectum.
...	1	...	...	...	...	...	...	...	...	...	1	...	Glands involved, albuminuria.
1	...	...	...	...	...	...	...	...	...	1	...	...	
...	1	2	1	...	...	...	...	...	1	2	...	1	Upper jaw 1.
1	...	...	...	...	...	...	...	...	...	1	...	...	
...	...	1	...	...	...	...	...	...	1	...	...	...	
...	...	1	...	...	...	...	...	...	...	1	...	...	
...	...	...	...	2	...	...	...	...	...	2	...	...	Humerus, a readmission with recurrence.
...	1	...	2	2	...	...	...	...	3	2	...	...	Femur 2, skin of leg 2, foot 1.
...	...	1	4	1	...	...	...	...	2	3	...	1	Recurrent 3.
...	1	...	2	1	...	...	...	...	...	3	1	...	Neck 2, recurrent 1, groin 1, axilla 1.

TABLE I.—*Abstract, showing Diseases, Injuries, &c., in*

DISEASE	Sex.		Age.								Duration before admission.							
	M.	F.	Under 5	5–10	–20	–30	–40	–50	–60	Above 60	Dys 1–4	Dys. 5–13	Wks 2–4	Mts. 1–2	Mts. 2–6	Mts. 6–12	Chronic	Not reported.
LOCAL DISEASES.																		
TUMOURS—*continued.*																		
Myxoma	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...
Fibroma	1	3	...	...	2	1	1	...	...	...	...	...	...	...	...	...	4	...
Myo-fibroma	...	4	...	...	...	...	2	2	...	...	...	...	...	...	...	...	4	...
Fibro-cellular	1	1	...	...	...	...	...	1	1	...	...	...	...	...	...	...	2	...
Fibro-lipoma	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Lipoma	4	11	...	...	1	2	4	3	2	3	...	...	...	...	2	3	10	...
Adenoma	...	8	...	...	2	3	2	1	...	...	...	...	...	...	2	1	5	...
Lymphoma	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...
Polypi	1	2	...	1	...	1	1	...	...	...	...	...	...	...	...	...	3	...
Enchondroma	1	1	...	...	...	2	...	...	...	...	...	...	...	...	...	...	2	...
Exostosis	4	2	...	1	2	2	1	...	...	...	...	...	...	...	...	1	5	...
Lymphadenoma	2	...	1	1	...	...	...	...	...	...	...	...	...	...	...	1	1	...
Papilloma	4	...	1	...	...	1	...	...	...	2	...	...	...	...	...	1	3	...
Molluscum	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...
Angioma	1	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...
Nævus	1	7	7	...	...	1	...	...	...	...	...	...	...	...	...	...	8	...
Rodent ulcer	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...
Lupus	2	6	...	...	5	2	1	...	...	...	...	...	...	...	...	4	4	...
Cystic—																		
a. Ovarian	...	23	...	...	2	4	7	5	5	...	...	...	...	...	4	3	15	1
b. Sebaceous	4	...	...	...	...	1	1	2	...	...	...	...	...	...	...	...	4	...
c. Dermoid	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
d. Hydatid	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...
e. Other cysts	3	2	2	1	...	1	1	...	...	...	...	...	...	...	1	1	2	1
DISEASES OF THE EYE.																		
Strabismus	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...
NERVOUS SYSTEM.																		
Infantile paralysis	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...
Paralysis of musculo-spinal nerve	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...
CIRCULATORY SYSTEM.																		
Aneurism	4	...	...	...	...	1	...	2	...	1	...	...	...	1	2	1	...	...
Varicose veins	9	2	...	...	4	3	2	2	...	...	...	...	...	1	...	...	10	...
Phlebitis	...	2	...	...	...	...	1	...	...	1	...	1	1	...	...	...	...	...
Thrombosis	1	2	...	...	...	1	...	...	2	...	...	1	2	...	...	...	...	...
Hæmorrhage	8	2	1	...	2	2	3	...	2	...	10	...	...	...	...	...	...	...
Gangrene	2	3	1	1	...	...	...	...	1	2	2	...	...	...	...	2	...	...

Classes, according to authorised Nomenclature—continued.

Duration of residence.									Result.				Remarks.
Dys. 1–4	Dys. 5–13	Wks 2–4	Mts 1–2	Mts. 2–4	Mts. 4–6	Mts. 6–9	Mts. 9–12	Above a year.	C.	R	U.	D.	
...	...	...	1	...	...	...	...	...	1	...	...	...	Thigh.
...	...	2	2	...	...	...	...	...	4	...	...	...	Chest wall 2, leg 2.
1	1	...	...	2	...	...	...	...	...	4	...	...	Uterus.
...	...	1	1	...	...	...	...	...	2	...	...	...	Buttock 1, abdominal wall and multiple 1.
...	...	1	...	...	...	...	...	...	...	...	...	1	Congenital of back, pyæmia.
...	7	3	4	1	...	...	...	...	13	1	...	1	Back and shoulder 2, neck 2, arm 2, thigh 1.
...	1	2	5	...	...	...	...	...	8	...	...	...	Right breast 5, left 3; removal in each case.
...	...	...	1	...	...	...	...	...	1	...	...	...	Neck.
...	3	...	...	...	...	...	...	...	2	1	...	...	Rectal; one suffering from cylindroma.
...	...	1	1	...	...	...	...	...	2	...	...	...	Submaxillary gland 1, parotid 1.
1	3	2	...	...	...	...	...	...	5	...	1	...	Multiple 1, lower jaw 1, subungual 4.
...	...	...	...	2	...	...	...	...	1	1	...	...	Neck; operation in each case.
...	...	4	...	...	...	...	...	...	4	...	...	...	Ear 2, cheek 1, tongue 1.
...	...	1	...	...	...	...	...	...	1	...	...	...	Face.
...	...	...	...	1	...	...	...	...	...	1	...	...	Multiple, probably sarcomatous.
2	4	1	1	...	...	...	...	...	5	2	1	...	
...	1	...	...	...	...	...	...	...	1	...	...	...	Face; removal.
...	1	1	6	...	...	...	...	...	8	...	...	...	Neck, face, groin 1, face 4, nose 2, nose and face 1.
2	2	3	10	16	...	...	...	...	13	2	3	5	Operation 17, of which 4 died. See General Summary.
...	1	3	...	...	...	...	...	...	4	...	...	...	Scalp, face, thigh, buttock.
...	1	...	...	...	...	...	...	...	1	...	...	...	Face.
...	...	...	1	...	...	...	...	...	...	1	...	...	Abdomen.
...	1	1	3	...	...	...	...	...	5	...	...	...	Abdomen 1, breast 1, cord 1, submaxillary 1, biceps 1.
...	...	1	...	...	...	...	...	...	1	...	...	...	
...	...	...	...	1	...	...	...	...	1	...	...	...	Amputation of leg.
...	...	...	1	...	...	...	...	...	...	1	...	...	Injury.
...	...	2	1	1	...	...	...	...	2	...	...	2	Popliteal 3, femoral 1.
1	3	1	6	...	...	...	...	...	7	4	...	...	Operation 7.
...	...	1	1	...	...	...	...	...	2	...	...	...	
...	...	3	...	...	...	...	...	...	3	...	...	...	
3	4	3	...	...	...	...	...	...	10	...	...	...	Wounds of ears 1, supra-orbital artery 1, facial 1, foot 1; excision of tonsil 1, circumcision 1, varicose veins 2, epistaxis 2.
...	2	1	...	2	...	...	...	...	3	1	...	1	Traumatic 1, senile 3, symmetrical 1. See Hospital Reports, 1882.

TABLE I.—*Abstract, showing Diseases, Injuries, &c., in*

DISEASE.	Sex.		Age.								Duration before admission.							
	M.	F.	Under 5	5–10	–20	–30	–40	–50	–60	Above 60	Dys. 1–4	Dys. 5–13	Wks 2–4	Mts 1–2	Mts. 2–6	Mts. 6–12	Chronic.	Not reported.
RESPIRATORY SYSTEM.																		
Foreign body	1	1	1	1	...	...	...	...	...	...	...	1	...	...	...	1	...	...
GLANDULAR SYSTEM.																		
Glandular hypertrophy	...	2	...	...	1	1	...	...	...	...	..	...	...	...	...	...	2	...
Adenitis	3	2	2	...	...	1	1	1	...	...	1	3	...	...	1	...	...	...
Abscess	9	12	4	...	7	7	2	1	...	...	2	1	7	8	2	...	1	...
Caseous degeneration	1	5	...	2	4	...	...	...	...	...	...	...	...	...	1	...	5	...
Lymphangitis	7	1	1	...	1	3	...	3	...	...	5	3	...	...	...	...	...	...
Breast, chronic inflammation	...	2	...	...	...	...	...	1	1	...	...	...	...	...	1	...	1	...
Breast, abscess	...	4	...	...	...	2	1	1	...	...	...	...	2	1	1	...	...	...
DISEASES OF DUCTLESS GLANDS.																		
Thyroid	1	2	...	...	1	...	1	1	...	...	...	...	...	1	...	...	2	...
DIGESTIVE SYSTEM.																		
Glossitis	1	2	...	...	...	1	1	1	...	...	2	..	...	...	1	...	...	...
Ulceration of tongue	2	...	...	...	..	...	...	2	...	...	...	...	..	1	1	...	...	...
Tonsillitis	1	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...
Hypertrophy of tonsil	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...
Foreign body	2	3	1	...	...	3	1	...	...	...	4	...	...	...	1	...	...	...
Œsophageal stricture	1	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...
Strangulated hernia—																		
Inguinal	26	1	2	...	2	8	5	5	3	2	25	1	1	...	...	...	...	...
Femoral	2	15	...	...	...	2	5	5	2	3	14	2	1	...	...	...	...	...
Umbilical	4	2	...	...	...	...	1	1	1	3	6	...	...	...	...	...	...	...
Ventral	1	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...
Herniæ—																		
Inguinal	6	1	3	...	...	3	1	...	...	...	2	...	1	...	...	...	4	...
Femoral (irreducible)	...	1	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...
Umbilical	1	1	...	...	...	...	...	1	1	...	...	...	...	...	...	...	2	...
Rupture of hernial sac	...	1	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...
Intestinal obstruction	2	1	...	...	...	1	...	1	1	...	...	1	2	...	...	...	...	...
Hæmorrhoids	17	5	...	...	...	8	4	4	4	2	...	...	...	...	...	2	20	...
Prolapse of rectum	2	1	1	...	...	...	2	...	...	...	1	1	...	...	...	...	1	...
Fissure of rectum	...	2	...	...	1	1	...	...	...	...	...	1	...	..	...	1	...	...
Ulceration of rectum	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...
Stricture of rectum	4	4	1	...	...	2	...	1	3	1	...	...	...	...	2	1	5	...
Fistula in ano	22	5	...	...	1	6	12	7	1	...	...	1	3	1	11	2	9	...
GENITO-URINARY SYSTEM.																		
Phimosis	8	...	3	2	1	1	1	...	...	...	...	2	...	...	...	...	6	...
Paraphimosis	1	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...
Perinæal fistula	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...

Classes, according to authorised Nomenclature—continued.

Duration of residence.									Result.				Remarks.
Dys 1–4	Dys. 5–13	Wks 2–4	Mts. 1–2	Mts. 2–4	Mts 4–6	Mts. 6–9	Mts 9–12	Above a year.	C.	R.	U.	D.	
...	...	...	1	...	...	...	...	...	2	...	...	...	Tracheotomy, complications; broncho-pneumonia 1, bronchitis 1.
...	1	...	1	...	...	...	...	...	2	...	...	...	Neck 2, removed.
...	1	2	2	...	...	...	...	...	4	1	...	...	Neck 1, groin 4.
...	5	9	4	2	1	...	...	...	20	1	...	.	Neck 4, axilla 7, groin 7, popliteal 3.
...	3	2	1	...	...	...	...	...	1	5	...	...	Neck 6.
1	4	3	...	...	...	...	...	...	8	...	...	...	Arm 1, leg 5, foot 2.
...	1	...	1	...	...	...	...	...	1	...	...	1	Fatal, after amputation; erysipelas, pyæmia.
...	...	3	1	...	...	...	...	...	3	1	...	...	
1	1	...	1	...	...	...	...	...	1	2	...	...	Division of isthmus 1.
...	2	...	1	...	...	...	...	...	3	...	...	...	2 acute inflammation.
...	...	1	1	...	...	...	...	...	...	1	...	1	Tubercular. Died of phthisis on readmission.
...	1	...	...	...	...	...	...	...	1	...	...	...	
1	...	...	...	...	..	...	...	...	1	...	...	...	Tonsils removed.
1	2	2	...	...	...	...	...	...	5	...	...	...	Œdema of glottis requiring tracheotomy, 1.
...	1	...	...	...	...	...	...	...	...	1	...	...	Probably malignant.
7	9	3	7	1	...	...	...	...	25	...	...	2	See Special Table—Hernia.
2	5	2	7	1	...	...	...	...	11	1	...	5	Ditto.
5	...	1	...	...	...	...	...	...	1	...	...	5	Ditto.
...	...	1	...	...	...	...	...	...	1	...	...	...	Ditto.
2	4	...	1	...	...	...	...	...	...	7	...	...	Ditto.
1	...	...	...	...	...	...	...	...	...	1	...	...	Ditto.
...	1	1	...	...	...	...	...	...	...	2	...	...	Ditto.
...	...	...	...	1	...	...	...	...	1	...	...	...	Femoral. See Special Table—Hernia.
1	2	...	...	...	...	...	...	...	...	...	...	3	See General Summary.
...	10	7	4	1	...	...	...	...	15	7	...	...	Operation 15.
...	2	1	...	...	...	...	...	...	3	...	..	...	With hæmorrhoids, 1.
1	...	1	...	...	...	...	...	...	2	...	...	...	
...	1	...	...	...	...	...	...	...	...	1	...	...	Simple.
1	1	3	2	1	...	...	...	...	2	5	1	...	Fibrous 2.
...	6	9	10	2	...	...	...	...	22	4	...	1	See General Summary.
5	3	...	...	...	...	...	...	...	8	...	...	...	Operation 7.
...	1	...	...	...	...	...	...	...	1	...	...	...	
...	...	...	1	...	...	...	...	...	1	...	...	...	After operation for ruptured perinæum.

TABLE I.—*Abstract, showing Diseases, Injuries, &c., in*

DISEASE.	Sex.		Ages.								Duration before admission.							
	M.	F.	Under 5	5–10	–20	–30	–40	–50	–60	Above 60	Dys 1–4	Dys. 5–13	Wks 2–4	Mts. 1–2	Mts. 2–6	Mts. 6–12	Chronic	Not reported.
GENITO-URINARY SYSTEM—*continued.*																		
Epididymitis	1	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...
Orchitis	2	...	...	...	2	...	...	...	...	...	...	1	1	...	...	...	...	...
Varicocele	8	...	...	...	3	4	1	...	...	...	...	...	...	...	1	...	7	...
Hydrocele	7	...	...	...	1	...	1	2	1	2	...	...	...	...	1	...	6	...
Hæmaturia	2	...	...	...	...	...	1	1	...	...	...	1	...	...	1	...	...	...
Incontinence of urine	2	...	...	2	...	...	...	...	...	...	...	...	...	...	...	1	1	...
Retention of urine	20	...	3	...	1	3	3	6	2	2	20	...	...	...	...	...	...	...
Stricture of urethra	28	...	...	...	2	3	5	7	6	5	...	...	...	...	1	1	26	...
Extravasation of urine	6	...	...	2	...	...	3	...	1	...	4	1	1	...	...	...	...	...
Urinary abscess	4	...	...	1	1	1	1	...	...	...	...	3	1	...	...	...	...	...
Urinary fistula	2	...	...	...	1	...	1	...	...	...	...	...	...	...	1	...	1	...
Prostatic enlargement	6	...	...	...	...	1	...	1	3	1	...	...	1	1	1	...	3	...
Cystitis	7	...	...	...	...	2	2	2	1	...	...	...	...	3	...	1	3	...
Tumour of bladder	1	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...
Calculus of—																		
Urethra	2	...	1	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...
Bladder	10	1	5	...	4	1	...	...	...	1	...	1	4	...	...	2	4	...
Ureter	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Kidney	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...
Renal disease—																		
Hydronephrosis	4	...	...	...	4	...	...	...	...	...	...	...	...	...	...	...	4	...
Pyelitis	3	2	...	...	...	1	1	3	...	...	...	...	...	...	1	...	4	...
Vascular growths of meatus urinarius	...	3	...	...	2	...	...	...	...	1	...	...	...	..	...	...	3	...
OTHER AFFECTIONS OF THE GENERATIVE ORGANS.																		
a. Gonorrhœa	...	49	...	...	36	13	...	...	...	...	...	5	29	18	18	8	1	2
b. Soft sore	9	16	1	...	14	8	1	...	1	...	4	3	9	3	4	...	1	1
c. Warts	1	2	...	...	1	2	...	...	...	...	...	...	...	...	1	2	...	..
DISEASES OF THE BONES.																		
Osteitis deformans	1	...	...	...	...	...	...	1	...	...	...	..	...	...	...	...	1	..
Periostitis, acute—																		
Femur	1	1	1	...	1	...	...	...	...	...	...	1	1	...	...	...	...	..
Tibia	3	2	...	1	4	...	...	...	...	...	2	2	1	...	...	...	...	..
Do., subacute or chronic—																		
Skull	1	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	..
Ilium	...	1	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	..
Femur	...	1	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	..
Tibia	4	2	...	...	3	2	1	...	...	...	2	...	...	...	...	3	1	..
Os calcis	...	1	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	..

Classes, according to authorised Nomenclature—continued.

Duration of residence.									Result.				Remarks.
Dys. 1–4	Dys. 5–13	Wks 2–4	Mts. 1–2	Mts. 2–4	Mts. 4–6	Mts. 6–9	Mts. 9–12	Above a year.	C.	R.	U.	D.	
...	1	...	...	...	...	....	...	...	1	...	...	...	
...	2	...	...	...	...	...	...	...	2	...	...	...	Retained testis 1.
...	...	4	3	...	1	...	...	...	7	1	...	...	Operation 8.
1	3	1	1	1	...	...	...	...	6	1	...	...	See General Summary.
...	2	...	...	...	...	...	...	...	1	1	...	...	Cause doubtful.
...	2	...	...	...	...	...	...	...	1	1	...	...	Adhesion of prepuce 1, ? 1.
6	8	4	1	1	...	...	...	...	18	1	...	1	See General Summary.
1	3	11	7	6	...	...	...	...	20	5	...	3	Ditto.
...	2	...	1	3	...	...	...	...	5	...	...	1	Ditto.
...	1	...	2	1	...	...	...	...	4	...	...	...	
2	...	...	...	...	...	...	...	...	2	...	...	...	
...	1	4	1	...	...	...	...	...	1	5	...	...	
...	3	2	1	1	...	...	...	...	3	4	...	...	
...	1	...	...	...	...	...	...	...	...	...	...	1	Scirrhus. See 'Trans. Path. Soc.,' 1883.
...	...	...	1	...	...	...	...	...	2	...	...	...	One case also of bladder. See Summary.
1	2	2	5	1	...	...	...	...	7	...	...	4	
..	...	...	...	...	...	...	...	...	...	...	...	...	Ditto.
..	...	...	...	...	1	...	...	...	1	...	...	...	Removed. See 'Clin. Soc. Trans.,' 1884.
..	4	...	...	...	..	...	...	...	...	4	...	...	Old case; readmission.
..	2	1	1	1	...	...	...	...	...	3	...	2	Right 3, left 1, both 1; also phthisis. See Operations.
1	1	1	...	...	...	...	...	...	3	...	...	...	
1	9	17	16	6	...	...	...	...	42	7	...	...	
..	2	8	11	2	1	1	...	...	22	3	...	...	
..	2	1	...	...	...	...	...	...	2	1	...	...	Operation 3.
..	1	...	...	...	...	...	...	...	...	1	...	...	
..	...	...	1	...	1	...	...	...	2	...	...	...	
1	...	1	...	1	1	1	...	...	5	...	...	...	
..	...	...	...	1	...	...	...	...	...	1	...	...	Syphilis.
..	...	...	...	1	...	...	...	...	1	...	...	...	With abscess.
..	...	...	...	1	...	...	...	...	1	...	...	...	
1	2	1	2	...	...	...	...	...	5	1	...	...	Syphilis 2, rheumatism 1, struma 2, injury 1.
..	...	...	1	...	...	...	...	...	1	...	...	...	Syphilis.

TABLE I.—*Abstract, showing Diseases, Injuries, &c., in*

DISEASE.	Sex.		Ages.								Duration before admission.						
	M.	F.	Under 5	5–10	–20	–30	–40	–50	–60	Above 60	Dys. 1–4	Dys. 5–13	Wks 2–4	Mts. 1–2	Mts 2–6	Mts. 6–12	Chronic.	Not reported.
DISEASES OF THE BONES—*continued.*																		
Osteitis—																		
Inferior maxilla	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	..
Ulna	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	..
Tibia	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	..
Abscess of bone	1	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	..
Necrosis—																		
Multiple	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	..
Frontal bone	1	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	..
Inferior maxilla	4	2	1	1	1	1	...	1	1	...	...	...	...	2	2	...	2	..
Phalanx	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	..
Rib	...	1	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	..
Femur	3	1	1	1	1	...	...	1	...	...	...	...	...	2	1	...	1	..
Tibia	9	3	1	...	7	2	...	...	2	...	...	...	...	3	6	1	2	..
Fibula	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	..
Os calcis	1	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	.
Caries—																		
Mastoid cells	1	1	...	1	...	...	...	...	1	...	...	...	1	...	1	...	...	.
Metacarpal bones	1	4	...	1	3	...	...	1	...	...	...	...	...	...	...	4	1	.
Ribs	2	1	...	...	2	...	...	...	1	...	...	...	...	...	1	1	1	.
Pelvic bones	1	1	...	...	1	1	...	...	...	...	...	...	...	...	...	1	1	.
Femur	1	1	...	...	...	...	1	1	...	...	...	...	...	...	1	...	1	.
Tibia	3	...	...	...	2	..	1	...	...	...	...	...	...	...	1	...	2	.
Os calcis	5	1	1	1	...	4	...	...	...	...	...	...	...	1	2	...	3	.
Tarsal bones	4	4	...	...	2	3	2	1	...	...	...	...	1	...	1	1	5	.
Metatarsal	1	1	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	
DISEASES OF JOINTS.																		
Shoulder—																		
Incipient	...	2	...	...	1	...	1	...	...	...	...	...	2	...	...	...	...	.
Chronic	...	2	...	...	1	...	...	1	...	...	...	...	...	...	...	...	2	.
Anchylosis	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	.
Old excision	...	1	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	.
Elbow—																		
Incipient	1	2	1	...	1	1	...	...	...	...	...	...	2	1	...	...	...	.
Chronic	3	...	...	3	...	...	...	...	...	...	...	...	...	...	...	1	2	.
Anchylosis	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	.
Old excision	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	.
Wrist	...	1	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	.

Classes, according to authorised Nomenclature—continued.

Duration of residence.									Result.				Remarks.
Dys. 1–4	Dys. 5–13	Wks 2–4	Mts. 1–2	Mts. 2–4	Mts. 4–6	Mts. 6–9	Mts. 9–12	Above a year.	C.	R.	U.	D	
...	...	1	...	...	...	...	...	...	1	...	...	...	Trephined.
...	...	...	...	1	...	...	...	...	...	1	...	...	
...	...	...	...	1	...	...	...	...	1	...	...	...	Ditto.
...	...	...	1	...	...	...	...	...	1	...	...	...	Incision.
...	1	...	...	...	...	...	...	...	...	1	...	...	Strumous iritis.
...	...	...	1	...	...	...	...	...	...	1	...	...	? after erysipelas.
...	3	1	2	...	...	...	...	...	4	2	...	...	Injury 2, ? 1, ? after periostitis from decayed teeth 3.
...	...	...	1	...	...	...	...	...	1	...	...	...	Amputation.
...	...	...	...	...	1	...	...	...	1	...	...	...	Operation.
...	...	1	2	...	1	...	...	...	2	1	...	1	Fatal: Albuminuria and amyloid disease; amputation of thigh.
...	1	...	5	5	...	1	...	...	11	1	...	...	After periostitis 3, scarlatina 1, injury 4, fracture 2, ? 2.
...	...	...	...	1	...	1	...	...	1	...	...	...	? There was a strong phthisical history.
...	...	...	...	1	...	...	...	...	1	...	...	...	Injury.
...	...	2	...	...	...	...	...	...	...	1	...	1	Died: F., æt. 57, diabetes and erysipelas.
2	...	1	2	...	...	...	...	...	1	4	...	...	1 three admissions, 1 old Syme's amp. for caries.
...	1	...	1	1	...	...	...	...	2	1	...	...	1 syphilitic, 1 chronic knee disease.
...	...	...	...	1	1	...	...	...	1	1	...	...	Exact position of disease not certain.
...	...	...	1	...	1	...	...	...	1	1	...	...	1 syphilitic; 1 of stump, reamputation.
...	...	...	1	1	1	...	...	...	2	...	...	1	Died: æt. 17, disease of both tibiæ, anchylosis of most joints, fracture of femur, erysipelas.
...	1	...	3	2	...	...	...	...	3	3	...	...	Excision of os calcis 1.
...	...	1	2	4	1	...	...	...	4	1	...	3	Died: females—æt. 50, phthisis and amyloid disease; æt. 25, phthisis; æt. 29, exhaustion, abscess in pelvis, bedsores.
...	1	1	...	...	...	...	...	...	...	1	1	...	
..	1	1	...	...	...	...	...	...	...	2	...	...	1 puerperal.
..	...	...	...	2	...	...	...	...	2	...	...	...	1 excision of head of humerus.
1	...	...	...	...	...	...	...	...	1	...	...	...	Anæsthetic and passive movement.
1	...	...	...	...	...	...	...	...	...	1	...	...	See Chronic Disease.
..	...	1	2	...	...	...	...	...	3	...	...	...	1 gonorrhœal, 1 contracted scarlatina.
..	1	...	2	...	...	...	...	...	...	3	...	...	2 cases of old hip-joint excision; readmission.
..	...	1	...	...	...	...	...	...	...	1	...	...	
..	...	...	...	...	1	...	...	...	1	...	...	...	Erysipelas; the excision was for strumous disease.
..	...	...	1	...	...	...	...	...	1	...	...	...	Suppuration in joint; amputation.

Table I.—*Abstract, showing Diseases, Injuries, &c., in*

DISEASE.	Sex.		Ages.								Duration before admission.							
	M.	F.	Under 5	5–10	–20	–30	–40	–50	–60	Above 60	Dys. 1–4	Dys 6–13	Wks 2–4	Mts. 1–2	Mts. 2–6	Mts. 6–12	Chronic.	Not reported.
Diseases of Joints—*continued.*																		
Thumb	...	1	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...
Hip—																		
Incipient	14	15	12	11	5	...	1	...	...	...	3	2	5	4	14	1	...	...
Chronic	20	24	11	12	12	5	2	2	...	...	...	...	2	2	3	2	35	...
Rheumatism	...	2	...	...	1	...	1	...	...	...	...	...	...	...	2	...	...	...
Old excision	1	2	...	2	...	1	...	...	...	...	...	...	...	...	...	1	2	...
Hysterical	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...
Knee—																		
Incipient	8	5	3	...	2	5	1	1	1	...	1	1	4	2	4	1	...	...
Chronic	19	14	9	7	5	7	1	2	2	...	...	...	...	1	3	7	22	...
Anchylosis	1	7	2	1	1	2	...	1	1	...	...	...	...	...	...	2	6	...
Old excision	2	1	1	...	1	1	...	...	...	...	...	...	...	...	...	...	3	...
Rheumatoid	1	3	...	...	...	3	...	...	...	1	...	...	...	1	1	2	...	...
Loose cartilage	1	1	...	...	...	...	...	...	1	1	...	...	...	...	...	...	2	...
Ankle—																		
Incipient	2	1	...	...	1	2	...	...	...	...	...	...	2	1	...	...	...	...
Chronic	2	6	4	...	2	1	1	...	...	...	...	...	...	1	4	1	2	...
Anchylosis	2	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	2	...
Old excision	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...
Foot—																		
Tarsal joints	1	1	...	...	1	...	1	...	...	...	...	...	...	...	...	...	2	...
Diseases of the Spine.																		
Pott's curvature	13	7	3	2	8	3	4	...	...	...	...	...	...	1	6	4	9	...
Coccydynia	...	2	...	...	...	2	...	...	...	...	...	...	...	...	2	...	...	...
Deformities.																		
Talipes—																		
Equino-varus	9	5	5	4	3	...	2	...	...	...	...	...	...	...	...	1	13	...
Equinus	3	1	1	3	...	...	...	...	...	...	...	...	...	...	...	...	4	...
Valgus	4	2	...	...	6	...	...	...	...	...	...	...	...	...	5	...	1	...
Clavus	1	2	1	2	...	...	...	...	...	...	...	...	...	...	1	...	2	...
Hammer toe	1	3	...	...	3	1	...	...	...	...	...	...	...	...	...	...	4	...
Torticollis	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	1	1	...
Genu valgum	4	3	1	2	4	...	...	...	...	...	...	...	...	...	...	1	6	...
Genu varum	2	1	1	...	2	...	...	...	...	...	...	...	...	...	...	...	3	...
Curved tibiæ	1	2	1	2	...	...	...	...	...	...	...	...	...	...	...	...	3	...

Classes, according to authorised Nomenclature—continued

Duration of residence.									Result.				Remarks.
Dys. 1–4	Dys 5–13	Wks 2–4	Mts. 1–2	Mts. 2–4	Mts 4–6	Mts. 6–9	Mts. 9–12	Above a year.	C.	R.	U.	D.	
...	...	...	1	...	...	...	...	...	1	...	...	...	
...	8	4	13	2	1	1	...	...	12	17	...	...	See Special Summary.
2	3	7	4	14	9	2	1	2	10	30	...	4	
1	1	...	...	...	...	...	...	...	1	1	...	...	
...	1	1	1	...	...	...	...	...	...	3	...	...	
...	...	...	...	1	...	...	...	...	1	...	...	...	
...	5	6	1	1	...	...	...	...	6	6	1	...	
...	6	5	7	7	3	4	1	...	9	20	...	4	
...	...	1	5	2	...	...	...	...	4	4	...	...	Osteotomy 1.
...	1	...	...	2	...	...	...	...	1	2	...	...	
...	...	1	3	...	...	...	...	...	2	2	...	...	
...	...	1	...	1	...	...	...	...	1	1	...	..	
...	...	1	2	...	...	...	...	...	3	...	...	...	
...	2	1	1	2	1	1	...	...	3	5	...	...	
1	...	1	...	...	...	...	...	...	...	1	1	...	
...	...	...	1	...	...	...	...	...	...	1	...	...	
...	...	...	...	1	...	1	...	...	2	...	...	...	Syme's amputation 2.
...	...	2	6	5	6	1	...	...	5	12	...	3	Cervical 3, dorsal 6, lumbar 6, dorsal and lumbar 5. Abscess: psoas 8, lumbar 1. Sinuses: psoas 1, lumbar 1. Partial loss of power in arms 1, legs 1, phlebitis 1, phthisis 1. Fatal: hectic and exhaustion 1, pneumonia and disease of cord 1, gangrene of feet, tubercle of kidney, amyloid spleen 1.
...	1	...	1	...	...	...	...	...	1	1	...	...	
...	1	2	7	2	1	1	...	...	8	5	1	...	Double 3, left foot 2, right 9; talipes eq. of l. foot also 1; erysipelas 1, constriction of limbs 1.
...	1	2	1	...	...	...	...	...	2	2	...	...	Double 1, right 2, left 1; with webbed toes 1.
...	1	2	3	...	...	...	...	...	4	2	...	...	Double 3, right 1, left 2.
...	...	1	2	...	...	...	...	...	2	1	...	...	Right 1, left 2.
...	...	3	1	...	...	...	...	...	4	...	...	...	Amputation in each case.
...	...	...	1	...	...	...	...	...	1	...	...	...	Tenotomy.
1	...	...	1	4	1	...	...	...	6	...	1	...	Double 4, right 1, left 2; amputation 1.
...	...	1	2	...	...	...	...	...	...	3	...	...	Double 2, right 1.
...	...	2	1	...	...	...	...	...	1	2	...	...	Double osteotomy 1.

TABLE I.—*Abstract, showing Diseases, Injuries, &c., in*

DISEASE.	Sex.		Ages.								Duration before admission.							
	M.	F.	Under 5	5–10	–20	–30	–40	–50	–60	Above 60	Dys 1–4	Dys. 5–13	Wks 2–4	Mts. 1–2	Mts. 2–6	Mts. 6–12	Chronic.	Not reported.
DEFORMITIES—*continued.*																		
Deformity—																		
Congenital	1	1	1	...	1	...	...	...	...	...	...	...	...	...	...	...	2	...
Acquired—																		
a. Dupuytren's	2	...	..	...	1	...	...	1	...	...	...	...	...	...	...	...	2	...
b. Of toes	1	1	...	1	1	...	...	...	...	...	...	...	...	...	...	...	2	...
c. After injury	6	3	...	2	3	3	...	1	...	...	...	...	...	...	2	2	5	...
d. Burn	...	2	1	1	...	...	...	...	...	...	...	...	...	...	...	...	2	...
e. Ulceration	5	1	...	...	3	3	...	...	...	...	...	...	...	...	...	...	6	...
MALFORMATIONS.																		
Spina bifida	1	1	1	...	...	1	...	...	...	...	...	...	...	...	1	...	1	...
Harelip	10	2	12	...	...	...	...	...	...	...	...	...	...	...	...	...	12	...
Cleft palate	9	10	2	8	8	1	...	...	...	...	...	...	...	...	...	...	19	...
Extroversio vesicæ	2	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	2	...
APPENDAGES TO MUSCULAR SYSTEM.																		
Thecal suppuration	2	2	...	...	...	1	1	1	...	1	...	1	...	2	1	...	...	...
Ganglion	1	1	...	...	1	...	1	...	...	...	...	...	...	...	...	...	2	...
Bursæ—																		
1. Inflammation—																		
Prepatellaris	2	2	...	...	2	1	...	...	...	1	...	...	3	...	1	...	...	...
2. Suppuration—																		
Prepatellaris	10	11	...	...	8	6	3	2	1	1	4	11	3	1	2	...	...	...
Popliteal	...	1	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...
3. Enlargement—																		
Over olecranon	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...
Prepatellaris	1	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...
Popliteal	1	2	...	...	1	...	...	1	...	...	...	...	1	1	1	...	...	...
CELLULAR TISSUE.																		
Sinus	9	8	1	2	5	3	2	3	1	...	...	...	...	3	4	2	8	...
Abscess—																		
Pharynx	1	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...
Antrum	3	...	...	...	3	...	...	...	...	...	...	...	...	...	...	2	1	...
Face and neck	3	4	...	...	2	1	3	...	1	...	...	1	6	...	...	...	...	...
Upper extremity	...	2	...	...	...	1	1	...	...	...	...	1	...	1	...	...	...	...
Axilla	1	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...

Classes, according to authorised Nomenclature—continued.

Duration of residence.									Result.				Remarks.
Dys. 1–4	Dys. 5–13	Wks 2–4	Mts. 1–2	Mts. 2–4	Mts. 4–6	Mts. 6–9	Mts. 9–12	Above a year.	C.	R	U.	D.	
...	...	...	1	...	1	...	...	...	...	2	...	...	Of hands 2.
1	...	1	...	...	...	...	..	...	...	1	1	...	
...	...	1	1	...	...	...	...	...	2	...	...	...	First toe.
1	1	1	5	1	...	...	...	...	5	3	1	...	Fracture 5, wound 3, sprain 1.
...	...	...	...	2	...	...	...	...	2	...	...	...	Hands 1, face and neck 1.
...	2	1	...	2	1	...	...	...	1	2	3	...	Face 1, nose 4, lip 1, ? lupus 3, syphilis 3.
...	...	2	...	...	...	...	...	...	...	1	...	1	No P.M. report.
1	5	5	...	1	...	...	...	...	8	2	...	2	Single harelip 4, with cleft palate 2; double 8, with cleft palate 4. Fatal: ? peritonitis 1, marasmus 1; no operation.
...	12	5	...	1	1	...	...	...	12	3	4	...	Soft palate, M. 1, F. 4, operation 4; cleft of hard and soft 14, operation 12; removal of intermaxillary bone 1.
1	...	...	...	1	...	...	...	...	...	2	...	...	Readmission 1.
...	2	1	1	...	...	...	...	...	4	...	...	...	Amputation 2.
...	...	1	1	...	...	...	...	...	2	..	...	...	Wrist 1, foot 1.
...	3	1	...	...	...	...	...	...	4	...	...	...	Left 3, right 1.
1	3	13	3	1	...	...	...	...	20	...	1	...	Left 10, right 11.
...	...	...	...	...	...	1	...	...	1	...	...	...	Left; incisions.
...	1	...	...	...	...	...	...	...	1	...	...	...	Right.
...	1	...	...	...	...	...	...	...	1	...	...	...	Right.
...	1	...	1	1	...	...	...	...	2	1	...	...	Left 2; excision, followed by erysipelas, 1.
2	2	3	7	2	1	...	...	...	8	7	...	2	Cheek 1, shoulder 1, back 1, pubes 1, hip 1, gluteal 1, thigh 5, leg 3, heel 1. Died: M., æt, 56, erysipelas; F., æt. 28, hectic fever.
...	1	...	...	...	...	...	...	...	1	...	...	...	Caused by fish-bone.
1	...	1	1	...	...	...	...	...	2	1	...	...	
...	2	4	1	...	...	...	...	...	7	...	...	...	Over chin 3 M.; neck 4 F., 1 after lig. of vertebral.
...	1	...	1	...	...	...	...	...	2	...	...	...	Shoulder 1, forearm 1.
1	...	...	...	...	...	...	...	...	...	...	...	1	Convulsions.

TABLE I.—*Abstract, showing Diseases, Injuries, &c., in*

DISEASE.	Sex.		Ages.								Duration before admission.							
	M.	F.	Under 5	5–10	–20	–30	–40	–50	–60	Above 60	Dys. 1–4	Dys. 5–13	Wks 2–4	Mts. 1–2	Mts 2–6	Mts. 6–12	Chronic.	Not reported.
CELLULAR TISSUE.																		
Abscess (*continued*)—																		
Chest wall	2	1	1	...	...	...	...	1	1	...	...	1	...	1	1	...	...	...
Back	2	2	...	...	1	1	...	...	2	...	...	2	1	...	1	...	...	...
Abdomen	1	2	...	...	2	...	...	...	1	...	...	...	1	...	2	...	...	..
Ischio-rectal	2	2	...	...	2	1	1	...	...	...	1	1	...	2	...	...	...	...
Gluteal	2	3	...	1	...	1	2	...	1	...	...	1	3	...	1	...	...	...
Hip	1	2	...	1	...	1	...	...	1	...	...	...	2	...	...	...	1	...
Thigh	8	3	2	1	4	1	1	1	...	1	...	2	1	1	1	3	3	...
Leg	7	3	3	...	3	2	1	1	...	...	2	3	1	...	3	...	1	...
Foot	1	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...
Cellulitis—																		
Face and neck	3	1	...	...	2	2	...	...	...	...	2	1	...	1	...	...	...	...
Upper extremity	11	5	1	...	...	5	4	4	2	...	5	10	1	...	...	...	...	...
Lower extremity	2	2	...	...	2	...	2	...	...	...	1	...	2	1	...	...	...	...
Penis	2	...	1	...	...	...	1	...	...	...	1	...	1	...	...	...	...	...
Carbuncle	1	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...
Gumma	2	...	...	...	1	...	1	...	...	...	...	...	...	1	...	...	1	...
Ingrowing toe-nail	2	3	...	...	2	2	1	...	...	...	...	...	1	1	...	1	2	...
Conical stump	1	2	1	1	...	1	...	...	...	...	...	...	...	...	...	...	3	...
Ulcer—																		
Nares	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Axilla	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...
Arm	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...
Abdominal wall	...	2	...	...	1	...	...	...	1	...	...	...	...	...	...	...	2	...
Thigh	...	3	...	...	3	...	...	...	...	...	...	...	...	...	1	...	2	...
Leg	17	6	...	...	5	3	7	1	3	4	...	1	1	2	6	4	9	...
Foot	7	2	...	...	3	2	3	...	1	...	...	...	...	2	3	2	2	...
Erythema	...	1	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...
Vesication	...	1	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...
Eczema	5	1	2	1	1	...	2	...	...	...	1	1	...	1	1	...	2	...

Classes, according to authorised Nomenclature—continued.

Duration of residence.									Result.				Remarks.
Dys. 1–4	Dys. 5–13	Wks 2–4	Mts. 1–2	Mts. 2–4	Mts 4–6	Mts. 6–9	Mts. 9–12	Above a year.	C.	R.	U.	D.	
...	3	...	...	...	...	...	...	...	3	...	...	...	
...	...	2	1	1	...	...	...	...	4	...	...	...	Over scapula 1, dorsal 1, lumbar 2.
...	...	...	...	1	...	2	...	...	3	...	...	...	Hæmorrhage after incision into an abscess of thigh, requiring ligature of femoral artery and vein.
...	...	3	1	...	...	...	...	...	2	2	...	...	
...	3	1	1	...	...	...	...	...	2	3	...	...	1 readmission.
...	1	1	1	...	...	...	...	...	2	1	...	...	Groin 1.
1	...	2	6	1	1	...	...	...	8	3	...	...	Stump 2, erysipelas 2, eczema 1.
...	2	5	2	1	...	...	...	...	9	1	...	...	Both legs 1.
...	1	...	...	...	...	...	...	...	1	...	...	...	
1	3	...	...	...	...	...	...	...	4	...	...	...	Face, F. 1.
1	5	2	7	1	...	...	...	...	14	...	...	2	Of hand 6. Fatal: F., æt. 42, 46; suppuration in knee-joint 1, chronic bronchitis, fatty liver, 1.
...	...	1	1	1	1	...	...	...	4	...	...	...	Erysipelas 2.
...	...	1	1	...	...	...	...	...	2	...	...	...	After kick 1, circumcision 1.
...	...	1	...	...	...	...	...	...	1	...	...	...	Back.
...	...	2	...	...	...	...	...	...	2	...	...	...	Chest wall 1, scrotum 1.
1	4	...	...	...	...	...	...	...	4	1	...	...	
...	...	2	1	...	...	...	...	...	2	...	...	1	2 left arm; 1 died from erysipelas and dysentery.
...	...	1	...	...	...	...	...	...	...	1	...	...	Strumous.
...	...	...	...	1	...	...	...	...	...	1	...	...	Ditto.
...	...	...	1	...	...	...	...	...	1	...	...	...	Traumatic.
...	...	...	1	1	...	...	...	...	2	...	...	...	Over umbilical hernia 1, strumous 1.
...	...	...	...	2	1	...	...	...	1	2	...	...	After burn; one of both thighs and legs.
...	4	8	7	3	1	...	...	...	21	2	...	...	Traumatic 7, varicose 4, eczema 4, erysipelas 1, after amputation 1, syphilis 5, infantile paralysis 1.
...	5	2	2	...	...	...	...	...	8	1	...	...	
...	1	...	...	...	...	...	...	...	1	...	...	...	Circinatum.
1	...	...	...	...	...	...	...	...	1	...	...	...	Boot.
...	1	3	2	...	...	...	...	...	5	1	...	...	General 1, leg 3, face 1, groins 1. Pericarditis and pleurisy 1.

Table II.—

Injuries.	Sex.		Ages.								Duration before admission.							
	M.	F.	Under 5	5–10	–20	–30	–40	–50	–60	Above 60	Under 1 hour.	Hrs 1–6	Hrs 7–12	Hrs 13–24	Dys. 1–3	Dys. 3–6	Above 6 days.	Not reported.
General Injuries.																		
Burns	20	13	19	3	3	2	2	2	...	2	9	13	3	2	1	1	4	...
Scalds	22	11	24	6	2	1	...	...	...	...	5	14	...	3	5	3	3	...
General Contusions	8	4	...	2	3	5	2	...	...	...	5	2	4	...	...	1	...	...
Local Injuries.																		
Injuries of the head—																		
Contusion	8	3	...	3	4	3	...	1	...	...	6	2	2	...	1	...	...	...
Scalp wounds	31	11	2	4	3	17	8	3	1	2	18	22	1	...	1	...	...	...
Concussion	32	4	3	8	11	8	1	2	1	2	27	9	...	...	...	...	...	...
Fracture—Vault:																		
Simple	2	...	1	...	...	...	...	...	1	...	2	...	...	...	...	...	...	...
Compound	3	1	...	...	1	1	1	...	1	...	1	2	1	...	...	...	...	...
„ depressed	1	3	...	...	...	1	1	1	...	1	2	1	...	...	1	...	...	...
„ comminuted	2	1	1	...	1	1	...	...	...	...	3	...	...	...	...	...	...	...
Of base	24	3	1	3	...	6	7	7	1	2	18	4	...	...	1	...	...	...
Injuries of the face—																		
Contusion	2	1	1	...	1	1	...	...	...	...	...	...	2	...	...	...	1	...
Wound	10	2	2	2	4	2	...	1	...	1	8	3	...	...	1	...	...	...
Dislocation of inferior maxilla	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...
Fracture—Nasal	1	1	...	...	...	2	...	...	...	...	1	...	...	...	1	...	...	...
Sup. maxilla	5	...	...	2	...	1	1	...	1	...	4	...	...	1	...	...	...	...
Inf. maxilla	...	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...
Injuries of the eye—																		
Injury to eyeball	1	1	...	...	1	...	...	1	...	...	...	2	...	...	...	...	...	...
Injuries of the mouth—																		
Wounds	2	1	2	...	...	1	...	...	...	...	1	2	...	...	...	...	...	...
Injuries of the neck—																		
Wounds	8	...	...	...	...	1	1	4	...	2	6	1	1	...	...	...	...	...
Sprain	2	...	1	...	...	...	...	...	...	1	1	...	...	...	1	...	...	...
Injuries of the chest—																		
Contusion	9	1	2	1	...	4	1	...	...	1	8	2	...	...	...	...	...	...
Wound	...	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...
Fracture of rib	22	4	...	1	1	6	6	4	1	7	14	4	1	2	4	1	...	...
Contusion of lung	1	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...

Injuries.

Duration of residence.									Result.				Remarks.
Dys. 1–4	Dys. 5–13	Wks 2–4	Mts. 1–2	Mts. 2–4	Mts 4–6	Mts. 6–9	Mts. 9–12	Above a year.	C.	R.	U.	D	
13	3	7	8	1	1	...	...	...	16	1	...	16	See Summary of Injuries—"General."
10	9	6	5	3	...	...	...	...	24	1	...	8	
8	4	...	...	...	...	...	...	...	12	...	...	...	1 developed pleurisy.
5	4	2	...	...	...	...	...	...	10	1	...	...	Retention of urine 1, inequality of pupil 1.
8	20	9	5	...	...	...	...	...	37	4	...	1	See Summary of Injuries.
15	6	3	...	...	...	...	...	...	35	...	...	1	Ditto.
2	...	...	...	...	...	...	...	...	1	...	...	1	Ditto.
...	1	2	...	1	...	...	...	...	4	...	...	...	Ditto.
...	1	...	2	1	...	...	...	...	2	1	...	1	Ditto.
2	...	1	...	...	...	...	...	...	...	...	...	3	Ditto.
6	7	5	8	1	...	...	...	...	15	2	...	10	Ditto.
3	...	...	...	...	...	...	...	...	3	...	...	...	
6	4	2	...	...	...	...	...	...	12	...	...	...	
...	1	...	...	...	...	...	...	...	...	1	...	...	Spontaneous, ? rheumatoid arthritis.
...	1	1	...	...	...	...	...	...	2	...	...	...	Compound 1.
...	4	1	...	...	...	...	...	...	5	...	...	...	Compound 4, and malar 1; gunshot 1.
...	...	...	...	1	...	...	...	...	1	...	...	...	Scalp wound and erysipelas.
...	1	1	...	...	...	...	...	...	2	...	...	...	Excision 1.
1	2	...	...	...	...	...	...	...	3	...	...	...	Palate 2, tongue 1.
2	1	3	2	...	...	...	...	...	6	1	...	1	Suicidal 6, homicidal 2; penetrating air passages 1, pharynx 1. Also of abdominal wall 1, opium poisoning and acute mania 1. 1 Stricture, extravasation of urine and perineal section, died.
...	1	1	...	...	...	...	...	...	2	...	...	...	
3	6	...	...	...	...	...	...	...	10	...	...	...	
1	...	...	...	...	...	...	...	...	1	...	...	...	Dog bite.
4	11	10	1	...	...	...	...	...	17	3	...	6	See General Summary.
...	...	1	...	...	...	...	...	...	1	...	...	...	Hæmoptysis.

TABLE II.—

INJURIES.	Sex.		Ages.								Duration before admission.						
	M.	F.	Under 5	5–10	–20	–30	–40	–50	–60	Above 60	Under 1 hour.	Hrs. 1–6	Hrs. 7–12	Hrs. 13–24	Dys. 1–3	Dys. 3–6	Above 6 days.	Not reported.
LOCAL INJURIES—*continued.*																		
Injuries of the back—																		
Contusion	10	...	...	1	...	3	1	4	1	...	7	2	...	...	...	...	1	...
Wound	...	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...
Injuries of the spine—																		
Myelitis	...	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...
Concussion	2	...	...	...	...	1	1	...	...	...	1	...	...	1	...	...	...	...
Fracture	4	1	...	...	...	1	1	1	2	...	4	1	...	...	...	...	...	...
Injuries of the abdomen—																		
Wound of wall	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...
Wound of stomach	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...
Contusion	22	3	1	6	7	5	3	3	...	...	20	2	...	...	1	2	...	...
Injuries of the pelvis—																		
Contusion	3	...	...	...	2	...	...	1	...	...	3	...	...	...	...	...	...	...
Fracture	6	1	1	...	...	2	...	3	1	...	...	...	...	...	...	...	...	...
Wound of buttock	1	1	...	1	1	...	...	...	...	...	1	1	...	...	...	...	...	...
Contusion of groin	2	...	...	1	1	...	...	...	...	...	2	...	...	...	...	...	...	...
Wound of groin	...	1	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...
Contusion of genitals	1	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...
Wound of genitals	...	2	...	...	1	...	1	...	...	...	1	1	...	...	...	...	...	...
Rupture of perinæum	...	2	...	1	...	1	...	...	...	...	...	...	...	...	...	...	2	...
Rupture of urethra	3	...	...	...	...	1	1	1	...	...	1	1	1	...	...	...	...	...
UPPER EXTREMITY.																		
Contusion	5	...	...	...	...	4	1	...	...	...	5	...	...	...	...	...	...	...
Wound	16	9	1	1	12	3	5	3	...	...	18	3	...	...	...	1	3	...
Wound of artery	7	5	...	2	4	4	2	...	...	...	11	1	...	...	...	...	...	...
Dislocation of—																		
Humerus	2	1	...	...	...	...	1	...	...	2	1	1	...	...	...	...	1	...
Forearm	3	...	...	...	...	1	1	...	1	...	...	1	...	...	...	...	2	...
Thumb	3	...	2	...	...	...	...	...	1	...	...	...	...	...	1	...	2	...
Fracture of—																		
Clavicle	3	...	...	...	2	...	...	...	...	1	1	2	...	...	...	...	...	...
Humerus—																		
Simple	4	...	...	...	3	...	...	1	...	...	2	1	1	...	...	...	...	...
Comminuted	4	...	...	...	1	2	...	...	...	1	3	...	...	...	...	...	1	...
Compound	4	...	...	...	3	...	...	...	...	1	4	...	...	...	...	...	...	...
Radius and ulna—																		
Simple	1	2	...	...	...	...	1	1	...	1	1	...	...	1	...	...	1	...
Compound	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...

continued.

Duration of residence.									Result.				Remarks.
Dys. 1–4	Dys. 5–13	Wks 2–4	Mts. 1–2	Mts. 2–4	Mts. 4–6	Mts. 6–9	Mts. 9–12	Above a year.	C.	R.	U.	D.	
1	6	3	...	...	...	...	...	...	10	...	...	...	Retention of urine 1, bronchitis 1.
1	...	...	...	...	...	...	...	...	1	...	...	...	Punctured.
...	...	...	1	...	...	...	...	...	...	...	...	1	See 'Path. Soc. Trans.'
...	...	2	...	...	...	...	...	...	2	...	...	...	
...	3	1	...	1	...	...	...	...	1	1	...	3	See General Summary.
1	...	...	...	...	...	...	...	...	...	...	...	1	Ditto.
...	1	...	...	...	...	...	...	...	1	...	...	...	Sword swallowing.
11	10	3	1	...	...	...	...	...	19	...	...	6	See General Summary.
2	1	...	...	...	...	...	...	...	2	1	...	...	
1	1	1	4	...	...	...	...	...	5	...	...	2	See Special Summary.
...	1	1	...	...	...	...	...	...	2	...	...	...	
...	1	1	...	...	...	...	...	...	2	...	...	...	Retained testis 1.
...	...	1	...	...	...	...	...	...	...	...	...	1	Erysipelas; old dysentery.
1	...	...	...	...	...	...	...	...	1	...	...	...	
...	1	1	...	...	...	...	...	...	2	...	...	...	
...	...	...	2	...	...	...	...	...	1	1	...	...	Operation 1, albuminuria 1.
...	...	2	...	1	...	...	...	...	3	...	...	...	Contracted typhoid 1, epididymitis 1.
1	4	...	...	...	...	...	...	...	5	...	...	...	Rupture of muscle 1, injury to artery 1, D.T. 1.
2	11	11	1	...	...	...	...	...	21	4	...	...	
1	9	2	...	...	...	...	...	...	9	3	...	...	
2	...	...	...	1	...	...	...	...	3	...	...	...	
...	...	3	...	...	...	...	...	...	3	...	...	...	
1	...	...	2	...	...	...	...	...	1	2	...	...	
...	1	2	...	...	...	...	...	...	...	1	...	2	D.T. 1, erysipelas 1. See Special Table.
...	3	1	...	...	...	...	...	...	1	3	...	...	
1	2	1	...	...	...	...	...	...	2	2	...	...	
...	...	2	1	1	...	...	...	...	4	...	...	...	
...	1	1	1	...	...	...	...	...	2	1	...	...	Ununited 1.
...	...	...	...	...	1	...	...	...	1	...	...	...	Followed by necrosis.

TABLE II.—

INJURIES.	Sex.		Ages.								Duration before admission.							
	M.	F.	Under 5	5–10	–20	–30	–40	–50	–60	Above 60	Under 1 hour.	Hrs. 1–6	Hrs. 7–12	Hrs. 13–24	Dys. 1–3	Dys. 3–6	Above 6 days.	Not reported.
UPPER EXTREMITY—*continued.*																		
Fracture of—																		
Ulna—																		
Compound	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...
Radius—																		
Simple	4	2	...	1	1	...	1	...	1	2	3	1	...	1	...	1	...	...
Compound	1	1	...	...	...	...	...	1	1	...	2	...	...	...	...	...	...	...
Hand and fingers—																		
Comp. and comminuted	15	1	1	3	4	3	4	1	...	...	13	3	...	...	...	...	...	...
LOWER EXTREMITY.																		
Contusion of—																		
Hip	...	2	...	...	...	1	...	...	...	1	...	...	...	...	1	...	1	...
Thigh	3	...	...	1	...	1	...	...	1	...	1	1	...	...	1	...	...	...
Leg	5	1	1	...	1	...	...	2	...	2	4	1	...	...	...	1	...	...
Foot	4	...	...	1	1	...	...	2	...	...	1	2	...	...	1	...	...	...
Wound of—																		
Thigh	6	1	1	2	1	...	1	2	...	...	3	...	...	...	1	...	3	...
Knee	3	...	...	...	1	...	2	...	...	...	3	...	...	...	...	...	...	...
Leg	19	4	3	5	2	7	4	...	2	...	12	4	...	1	2	1	3	...
Foot	3	...	...	...	1	1	...	...	1	...	2	1	...	...	...	...	...	...
Dislocation of—																		
Hip	1	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...
Foot	1	...	...	...	...	...	...	1	..	...	...	...	...	...	...	...	1	...
Fracture of femur—																		
Simple	42	19	22	11	11	1	4	5	1	6	44	7	1	2	5	1	1	...
Compound	1	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...
Comp. comminuted	1	1	...	...	1	1	...	...	...	...	2	...	...	...	...	...	...	...
Neck of femur	1	2	...	...	...	1	...	...	...	2	1	1	...	...	...	...	1	...
Fracture of patella	14	5	...	...	...	5	4	5	3	2	13	...	...	...	5	...	1	...
Fracture of tibia—																		
Simple	22	8	9	11	2	3	...	5	...	...	28	2	...	...	...	...	...	...
Compound	2	1	...	...	...	1	1	...	1	...	2	...	...	...	1	...	...	...
Fracture of fibula—																		
Simple	30	5	...	...	4	8	8	10	3	2	30	3	...	1	1	...	...	...

continued.

Duration of residence.									Result.				Remarks.
Dys. 1–4	Dys. 5–13	Wks 2–4	Mts 1–2	Mts. 2–4	Mts. 4–6	Mts 6–9	Mts. 9–12	Above a year.	C.	R.	U.	D.	
...	...	...	...	...	1	...	...	...	1	...	...	...	Olecranon with joint, removed.
2	1	1	1	1	...	...	...	...	3	3	...	...	Double 1, contusions 3, scalp wound 2.
...	...	2	...	...	...	...	...	...	2	...	...	...	Contusion 1, scalp wound 1.
1	6	6	2	1	...	...	...	...	15	1	...	...	Wound of radial 1, amputation of forearm 3.
...	1	1	...	...	...	...	...	...	1	1	...	..	Epithelioma vulvæ 1.
2	...	...	...	...	1	...	...	...	3	...	...	...	Hæmophilia 1.
1	3	1	...	1	...	...	...	...	5	1	...	...	Retention of urine 1.
3	1	...	...	...	...	...	...	...	4	...	...	...	
...	4	2	1	...	...	...	...	...	7	...	...	...	
...	1	2	...	...	...	...	...	...	3	...	...	...	
1	6	7	5	3	...	...	1	...	23	...	...	...	Fracture of rib and pleurisy 1, hæmaturia 1, scalp wound 1, erysipelas 6, amputation 1.
...	2	...	1	...	...	...	...	...	3	...	...	...	
...	...	...	...	1	...	...	...	...	1	...	...	...	
...	1	...	...	...	...	...	...	...	...	...	2	...	
...	1	6	45	6	2	...	1	...	58	1	...	2	See General Summary.
...	...	...	1	...	...	...	...	...	1	...	...	...	Ditto.
...	...	1	...	1	...	...	...	...	2	...	...	...	
...	...	...	3	...	...	...	...	...	3	...	...	...	
...	...	4	14	...	1	...	...	...	17	1	...	1	
1	16	12	1	...	...	...	...	...	19	11	...	...	
...	...	...	1	...	2	...	...	...	3	...	...	...	
6	14	12	2	1	...	...	...	...	20	15	...	...	

TABLE II.—

INJURIES.	Sex.		Ages.								Duration before admission.							
	M.	F.	Under 5	5–10	–20	–30	–40	–50	–60	Above 60	Under 1 hour.	Hrs. 1–6	Hrs. 7–12	Hrs. 13–24	Dys. 1–3	Dys. 3–6	Above 6 days.	Not reported.
LOWER EXTREMITY—*continued.*																		
Fracture of tibia and fibula—																		
Simple	57	14	5	5	4	14	19	9	11	4	67	2	1	...	1	...	...	...
Compound	9	4	...	1	3	1	5	2	...	1	10	2	...	...	1	...	...	...
Comp. comminuted	2	...	...	...	...	1	...	1	...	...	...	2	...	...	...	...	...	...
Fracture of bones of foot	9	1	...	...	1	4	1	2	...	2	8	1	...	...	...	...	1	...
JOINTS.																		
Wound of—																		
Elbow	2	...	...	...	1	...	1	...	...	...	1	...	...	...	1	...	...	...
Wrist	1	1	1	1	...	...	...	...	...	...	2	...	...	...	...	...	...	...
Knee	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...
Synovitis (traumatic)—																		
Elbow	2	...	...	...	1	...	...	1	...	...	1	...	...	...	1	...	...	...
Knee	23	6	...	2	4	8	6	6	1	2	18	...	1	4	2	1	3	...
Ankle	1	1	...	...	...	2	...	...	...	...	1	...	...	...	...	1	...	...
Medical cases	16	14	3	1	6	11	4	5	...	...	1	...	...	1	1	2	21	...
Trivial cases	20	16	2	3	7	16	4	3	...	1	...	...	...	...	10	8	18	...
Ophthalmic cases, &c., not included in above report	134	149	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Brought in dead or dying soon after admission	7	2	...	...	...	1	1	1	...	...	...	...	...	...	...	...	...	...
Total	1530	1025																
	2555																	

continued.

Duration of residence.									Result.				Remarks.
Dys. 1–4	Dys. 5–13	Wks 2–4	Mts. 1–2	Mts. 2–4	Mts. 4–6	Mts. 6–9	Mts 9–12	Above a year.	C.	R.	U.	D.	
1	18	41	9	1	1	...	...	...	56	14	...	1	
1	...	3	3	4	2	...	...	...	12	...	...	1	
...	...	...	1	1	...	...	...	...	2	...	...	...	
...	2	3	3	2	...	...	...	...	10	...	...	...	Simple of foot 1, compound comminuted 1; toes: first, 6, second, 1, third, 1; amputation of leg 1, toes 6; bone removed 1.
...	1	...	...	1	...	...	...	...	2	...	...	...	Excision 1.
...	...	...	1	1	...	...	...	...	2	...	...	...	Division of vessels, nerves, tendons, 1.
...	...	1	...	...	...	...	...	...	1	...	...	...	
1	...	...	1	...	...	...	...	...	2	...	...	...	Slight concussion 1.
3	8	13	5	...	...	...	...	...	27	2	...	...	Right 16, left 13; acute 24, aspiration 2.
1	1	...	...	...	...	...	...	...	1	1	...	...	
4	10	6	3	2	1	...	...	...	10	19	...	1	Alcoholism 1, typhoid fever 1, rheumatic 3, anæsthetic leprosy 1, tumour of brain 1, acute hydrocephalus 1, epilepsy 2, hysteria 3, infantile spastic paralysis 1, peritonitis 1, perityphlitis 1, pyloric cancer 1, parametritis 1, cardiac 2, pulmonary 3, renal 1, &c.
27	4	4	1	...	...	...	...	...	31	5	...	...	
...	...	...	...	...	...	...	...	...	114	142	26	1	
...	...	...	...	...	...	...	...	...	...	...	...	9	Comminuted fracture of skull, bullet wound; fracture of ribs; rupture of lung, liver, kidneys, and spleen; cut throat, &c.
									1717	604	57	177	The total of cases treated to a termination during the course of the year does not include the cases of erysipelas or other disease arising as a complication of cases already under treatment. The numbers agree with those returned by the Steward of the hospital.
									2555				

TABLE III.—

SURGICAL OPERATIONS.	Sex.		Ages.							
	M.	F.	Under 5	5–10	–20	–30	–40	–50	–60	Above 60
REMOVAL OF TUMOURS AND GROWTHS.										
Amputation of the breast	...	10	...	...	...	1	1	3	3	2
Ditto with removal of glands	...	13	...	...	...	...	2	7	4	...
Removal of recurrent growth	...	3	...	...	...	...	...	1	2	...
For epithelioma of lip	10	...	...	...	...	...	...	4	3	3
„ mouth	2	...	...	...	...	...	...	...	2	...
„ tongue	4	...	...	...	...	...	...	2	...	2
„ cheek	...	1	...	...	...	...	...	...	...	1
„ glands	1	...	...	...	...	...	...	...	1	...
„ penis	1	...	...	...	...	...	...	...	1	...
„ rectum	1	1	...	...	...	...	1	1	...	...
For cylindroma of rectum	...	1	...	...	...	1	...	...	...	...
For sarcoma of skin	1	...	...	...	...	...	...	...	1	...
„ mouth	1	...	...	...	...	...	...	1	...	...
„ lower jaw	1	1	...	...	...	...	...	...	2	...
„ neck	1	...	...	...	1	...	...	...	...	...
„ breast	...	2	...	...	...	...	...	1	...	1
„ arm	...	2	...	...	2	...	...	...	...	...
„ lower extremity	2	...	...	...	...	...	1	...	...	1
For adenoma of breast	...	8	...	...	2	3	2	1	...	...
For myxoma	1	...	...	...	...	...	...	1	...	...
For fibroma	1	3	...	...	2	1	1	...	...	...
For fibro-cellular tumour	1	1	...	...	...	...	...	1	1	...
For fibro-lipoma	1	...	...	1	...	...	...	...	...	...
For lipoma	4	10	...	...	1	1	3	3	3	3
For lymphoma	1	...	...	...	1	...	...	...	...	...
For polypus	1	4	...	1	...	2	1	...	...	...
For enchondroma	1	1	...	...	...	2	...	...	...	...
For exostosis	3	2	...	...	2	2	1	...	...	...
For lymphadenoma	2	...	1	1	...	...	...	...	...	...
For papilloma	4	...	1	...	...	1	...	...	...	2
For angioma	1	...	...	...	...	...	...	1	...	...
For nævus	1	5	5	...	...	1	...	...	...	...
For rodent ulcer	1	...	...	...	...	...	...	...	1	...
For lupus	2	7	...	...	5	2	2	...	...	...
For molluscum	...	1	...	...	...	1	...	...	...	...
For ovarian tumour	...	17	...	...	2	2	5	4	4	...
For sebaceous cysts	4	...	...	...	...	1	1	2	...	...
For other cysts	3	2	2	1	...	1	1	...	...	...
CIRCULATORY SYSTEM.										
Ligature of temporal artery	1	1	...	...	...	...	2	...	...	...
„ facial	1	...	...	...	1	...	...	...	...	...
„ radial	5	3	...	...	4	3	1	...	...	...
„ ulnar	2	...	...	1	...	...	1	...	...	...
„ ulnar and radial	2	1	...	1	1	1	...	...	...	...
„ femoral	2	...	...	...	1	...	1	...	...	...

Surgical Operations.

Duration of residence after operation.									Result.				Remarks.
Under 4 days.	Dys. 5–13	Wks 2–4	Mts. 1–2	Mts. 2–4	Mts. 4–6	Mts. 6–9	Mts. 9–12	Above a year.	C.	R.	U.	D	
...	...	6	3	1	...	...	...	...	8	...	...	2	Fatal: double amputation for sarcoma and amputation for chronic inflammatory induration.
1	2	4	5	1	...	...	...	...	10	...	...	3	
...	...	3	...	...	...	...	...	...	3	...	...	...	
...	7	2	1	...	...	...	...	...	8	1	...	1	Fatal: disease also of glands and jaw.
...	1	...	1	...	...	...	...	...	1	1	...	...	
...	2	2	...	...	...	...	...	...	2	...	...	2	Also laryngotomy 1.
...	...	1	...	...	...	...	...	...	1	...	...	...	
...	1	...	...	...	...	...	...	...	1	...	...	...	
...	...	...	1	...	...	...	...	...	1	...	...	...	
...	...	2	...	...	...	..	...	...	...	2	...	...	
...	...	...	...	1	...	...	...	...	...	1	...	...	
...	...	1	...	...	...	...	...	...	1	...	...	...	Abdominal wall.
...	...	...	1	...	...	...	...	...	...	1	...	...	
...	1	1	...	...	...	...	...	...	1	...	...	1	
...	...	...	1	...	...	...	...	...	...	1	...	...	Recurrent.
...	...	1	...	1	...	...	...	...	1	1	...	...	Ditto.
...	...	...	2	...	...	...	...	...	...	2	...	...	Ditto.
...	...	...	1	1	...	...	...	...	2	...	...	...	See also Amputation for Disease.
...	6	2	...	...	...	...	...	...	8	...	...	...	
...	...	1	...	...	...	...	...	...	1	...	...	...	
...	1	2	1	...	...	...	...	...	4	...	...	...	
...	1	1	...	...	...	...	...	...	2	...	...	...	
...	1	...	...	...	...	...	...	...	...	...	...	1	Pyæmia.
...	9	4	1	...	...	...	...	...	13	...	...	1	Erysipelas.
...	1	...	...	...	...	...	...	...	1	...	...	...	
2	1	...	...	1	...	...	...	...	3	2	...	...	
...	2	...	...	...	...	...	...	...	2	...	...	...	
...	4	1	...	...	...	...	...	...	5	...	...	...	
...	...	...	1	1	...	...	...	...	1	1	...	...	
...	4	...	...	...	...	...	...	...	4	...	...	...	
...	...	...	1	...	...	...	...	...	...	1	...	...	
...	5	1	...	...	...	...	...	...	5	1	...	...	
...	1	...	...	...	...	...	...	...	1	...	...	...	
...	1	7	1	...	...	...	...	...	7	2	...	...	2 operations in 2 cases.
...	...	1	...	...	...	...	...	...	1	...	...	...	
2	2	2	9	2	...	...	...	...	13	...	...	4	
...	3	1	...	...	...	...	...	...	4	...	...	...	
2	1	2	...	...	...	...	...	...	5	...	...	...	Dermoid, submaxillary, breast, biceps, cord.
1	1	...	...	...	...	...	...	...	2	...	...	...	Wound.
...	1	...	...	...	...	...	...	...	1	...	...	...	Ditto.
1	7	...	...	...	...	...	...	...	7	1	...	...	Ditto.
...	...	2	...	...	...	...	...	...	2	...	...	...	Ditto.
...	3	...	...	...	...	...	...	...	1	2	...	...	Ditto.
...	...	...	2	...	...	...	...	...	2	...	...	...	Also ligature of femoral vein 1, aneurism 1.

TABLE III.—

SURGICAL OPERATIONS.	Sex.		Ages.							
	M.	F.	Under 5	5–10	–20	–30	–40	–50	–60	Above 60
CIRCULATORY SYSTEM—*continued.*										
For varicose veins	7	1	...	...	2	4	...	2	...	...
Venesection	1	...	...	...	...	...	1	...	...	...
RESPIRATORY SYSTEM.										
Laryngotomy	1	...	...	...	...	...	...	...	1	...
Tracheotomy	2	3	1	1	...	2	...	...	1	...
DISEASE OF DUCTLESS GLANDS.										
Division of thyroid isthmus	1	...	...	...	1	...	...	...	...	...
LYMPHATIC SYSTEM.										
Removal of glands	1	4	...	...	4	1	...	...	...	...
DIGESTIVE SYSTEM.										
Excision of tonsils	...	1	...	...	...	1	...	...	...	...
Strangulated inguinal hernia	10	...	1	...	1	2	...	3	3	...
„ femoral hernia	1	15	...	...	...	2	5	5	1	3
„ umbilical hernia	3	1	...	...	...	...	...	1	3	...
„ ventral hernia	1	...	...	...	...	...	...	1	...	...
Incision into hernial sac	1	...	1	...	...	...	...	...	...	...
For rupture of hernial sac	...	1	...	...	...	...	...	1	...	...
Gastrostomy	2	...	...	...	...	...	1	...	...	1
Abdominal section	1	3	...	...	...	3	...	1	...	...
Colotomy	3	...	...	...	...	...	...	...	2	1
For fissure of anus	...	2	...	...	...	2	...	...	...	...
For hæmorrhoids	12	4	...	...	...	6	3	3	2	2
For fistula in ano	21	5	...	...	2	7	11	5	1	...
For stricture of rectum	1	2	1	...	...	1	...	...	1	...
GENITO-URINARY SYSTEM.										
For phimosis	20	...	6	2	5	5	1	1	...	...
For hydrocele	9	...	...	...	3	...	1	2	...	3
For varicocele	9	...	...	...	4	4	1	...	...	...
For rupture of perinæum	...	1	...	...	...	1	...	...	...	...
For perineal fistula	...	1	...	...	...	1	...	...	...	...
For urethral caruncle	...	3	...	...	2	...	...	...	...	1
For removal of warts	1	11	...	...	6	6	...	...	...	...
For removal of hypertrophied labia	...	1	...	...	...	1	...	...	...	...
For removal of uterus and ovaries	...	1	...	...	...	...	...	...	1	...
Forcible dilatation of stricture	1	...	...	...	...	1	...	...	...	...
Internal urethrotomy	7	...	...	...	...	1	1	1	4	...
Perineal section	14	...	2	1	2	...	3	3	3	...

continued.

Duration of residence after operation.									Result.				Remarks.
Under 4 days.	Dys. 5–13	Wks 2–4	Mts. 1–2	Mts. 2–4	Mts. 4–6	Mts. 6–9	Mts. 9–12	Above a year.	C.	R.	U.	D.	
...	...	5	3	...	...	...	...	...	8	...	...	...	Excision 7, catgut ligature 1.
...	1	...	...	...	...	...	...	...	...	...	...	1	Fracture of ribs, &c.
...	...	1	...	...	...	...	...	...	...	1	...	...	
...	...	3	2	...	...	...	...	...	3	2	...	...	Foreign body 3, malignant disease 1, operation for submaxillary cyst 1.
...	...	...	1	...	...	...	...	...	1	...	...	...	
...	2	3	...	...	...	...	...	...	5	...	...	...	Hypertrophy 2, strumous 3.
1	...	...	...	...	...	...	...	...	1	...	...	...	
1	1	1	6	1	...	...	...	...	8	...	...	2	
1	1	6	7	1	...	...	...	...	10	1	...	5	Extra peritoneal operation 1.
3	1	...	...	...	...	...	...	...	...	...	...	4	
...	...	...	1	...	...	...	...	...	1	...	...	...	Ditto.
...	...	...	1	...	...	...	...	...	1	...	...	...	Suppuration of sac.
...	...	...	...	1	...	...	...	...	1	...	...	...	Protrusion of bowel.
2	...	...	...	...	...	...	...	...	...	...	...	2	Malignant stricture of œsophagus.
2	1	...	1	...	...	...	...	...	...	2	...	2	Intestinal obstruction 2, exploratory 2.
...	2	...	1	...	...	...	...	...	...	...	...	3	Intestinal obstruction 1, scirrhus of rectum 2.
...	2	...	...	...	...	...	...	...	2	...	...	...	
...	9	7	...	...	...	...	...	...	15	1	...	...	Clamp only 1, ditto with cautery 10, ligature 4.
1	5	15	5	...	...	...	...	...	24	2	...	...	
...	1	...	2	...	...	...	...	...	2	1	...	...	
1	4	12	3	...	...	...	...	...	20	...	...	...	Circumcision in 8, incision 12.
1	4	3	1	...	...	...	...	...	6	3	...	...	Tapping 4, with injection 4, incision 1.
...	3	5	1	...	...	...	...	...	8	1	...	...	
...	...	1	...	...	...	...	...	...	1	...	...	...	
...	...	...	1	...	...	...	...	...	1	...	...	...	
1	1	1	...	...	...	...	...	...	3	...	...	...	Meatus urinarius.
...	5	4	3	...	...	...	...	...	11	1	...	...	
...	...	1	...	...	...	...	...	...	1	...	...	...	
1	...	...	...	...	...	...	...	...	...	...	...	1	
...	1	...	...	...	...	...	...	...	1	...	...	...	
...	2	3	2	...	...	...	...	...	6	1	...	...	
1	2	1	5	5	...	...	...	...	8	2	...	4	

TABLE III.—

SURGICAL OPERATIONS.	Sex.		Ages.							
	M.	F.	Under 5	5–10	–20	–30	–40	–50	–60	Above 60
GENITO-URINARY SYSTEM—*continued.*										
Perineal puncture	3	...	...	...	...	...	1	1	1	...
Incision into bladder	1	...	...	...	...	1	...	...	...	...
Lithotrity	1	1	1	...	1	...	...	...	...	...
Lithotomy	8	...	4	...	3	1	...	...	...	...
Incision of ureter	...	...	...	...	...	...	...	...	...	...
Nephrolithotomy	1	...	...	...	1	...	...	...	...	...
Nephrectomy	...	1	...	...	...	...	1	...	...	...
LOCOMOTORY SYSTEM.										
Removal of necrosed bone from—										
Inferior maxilla	3	2	1	1	1	1	...	1	...	...
Ulna	1	...	...	...	1	...	...	...	...	...
Rib	...	1	...	...	1	...	...	...	...	...
Femur	...	1	1	...	...	...	...	...	...	...
Patella	...	1	...	...	1	...	...	...	...	...
Tibia	7	9	1	1	9	2	1	1	1	...
Fibula	...	1	...	...	...	...	1	...	...	...
Os calcis	1	...	...	...	1	...	...	...	...	...
For caries of—										
Humerus	...	1	1	...	...	...	...	...	...	...
Bones of hand	...	1	...	...	1	...	...	...	...	...
Pelvis	1	...	...	...	1	...	...	...	...	...
Femur	1	1	...	...	...	...	1	1	...	...
Tibia	2	...	...	...	1	...	1	...	...	...
Os calcis	2	1	1	1	..	1	...	...	...	...
Other bones of foot	1	...	...	...	1	...	...	...	...	...
Excision of os calcis	1	...	...	...	...	1	...	...	...	...
Excision of—										
Shoulder-joint	...	1	...	...	...	...	...	1	...	...
Elbow	1	...	...	...	...	1	...	...	...	...
Hip	4	2	1	2	3	...	...	...	...	...
Knee	3	2	2	...	1	2	...	...	...	...
Ankle	1	...	...	...	1	...	...	...	...	...
Incision of knee-joint	2	2	...	...	1	1	1	...	1	...
„ ankle-joint	1	...	...	...	1	...	...	...	...	...
Removal of loose cartilage from knee	1	...	...	...	...	...	...	...	1	...
Aspiration in disease of hip	...	1	...	1	...	...	...	...	...	...
„ „ knee	2	1	...	...	...	1	1	1	...	...
Tenotomy for club-foot	9	8	4	4	7	...	2	...	...	...
„ deformity	3	3	1	3	2	...	...	...	...	...
„ torticollis	...	1	...	1	...	...	...	...	...	...

continued.

Duration of residence after operation.									Result.				Remarks.
Under 4 days.	Dys. 5–13	Wks 2–4	Mts. 1–2	Mts. 2–4	Mts. 4–6	Mts. 6–9	Mts. 9–12	Above a year.	C.	R.	U.	D.	
...	2	...	1	...	...	...	...	...	1	...	...	2	
...	...	1	...	...	...	...	...	...	...	...	...	1	Rupture, fracture of pelvis.
...	1	1	...	...	...	...	...	...	2	...	...	...	
2	...	2	3	1	...	...	...	...	5	...	...	3	
...	...	...	...	...	...	...	...	...	...	...	...	...	See General Summary—Lithotomy.
...	...	...	1	...	...	...	...	...	1	...	...	...	
1	...	...	...	...	...	...	...	...	...	...	...	1	
...	3	1	1	...	...	...	...	...	4	1	...	...	
...	...	...	1	...	...	...	...	...	1	...	...	...	
...	...	...	1	...	...	...	...	...	1	...	...	...	
...	...	...	...	1	...	...	...	...	1	...	...	...	
...	...	...	1	...	...	...	...	...	1	...	...	...	
...	2	1	8	2	3	...	...	...	13	3	...	...	
...	...	...	1	...	...	...	...	...	1	...	...	...	
...	...	...	...	1	...	...	...	...	1	...	...	...	
...	...	...	...	...	1	...	...	...	...	1	...	...	
...	...	...	1	...	...	...	...	...	...	1	...	...	
...	...	...	...	...	1	...	...	...	1	...	...	...	
...	...	...	1	1	...	...	...	...	1	1	...	...	
...	...	1	...	1	...	...	...	...	1	...	...	1	Erysipelas l.
...	1	1	1	...	...	...	...	...	1	2	...	...	
...	...	1	...	...	...	...	...	...	1	...	...	...	
...	...	...	...	1	...	...	...	...	1	...	...	...	For caries.
...	...	...	...	1	...	...	...	...	1	...	...	...	
...	...	...	1	2	1	...	1	...	3	2	...	1	
...	...	...	1	...	2	1	1	...	5	...	...	...	
...	...	...	...	...	1	...	...	...	1	...	...	...	
...	...	1	2	...	1	...	...	...	...	4	...	...	
...	...	...	...	1	...	...	...	...	...	1	...	...	
...	...	...	...	1	...	...	...	...	...	1	...	...	Afterwards amputation of thigh.
...	...	...	...	1	...	...	...	...	...	1	...	...	
...	2	1	...	...	...	...	...	...	2	1	...	...	
...	2	7	5	1	1	1	...	...	12	5	...	...	
...	1	1	2	2	...	...	...	...	3	3	...	...	
...	...	1	...	...	...	...	...	...	1	...	...	...	

TABLE III.—

SURGICAL OPERATIONS.	Sex.		Ages.							
	M.	F.	Under 5	5–10	–20	–30	–40	–50	–60	Above 60
REPARATIVE OPERATIONS.										
Contracted cicatrix	...	1	...	1	...	...	...	...	...	...
Harelip	6	1	7	...	...	...	...	...	...	...
Cleft palate	7	9	1	8	6	1	...	...	...	...
Extroversio vesicæ	1	...	1	...	...	...	...	...	...	...
Deformity	2	1	1	...	1	...	...	1	...	...
Urinary fistula	1	...	...	...	...	...	1	...	...	...
Removal of premaxillary bone	3	...	2	...	1	...	...	...	...	...
Plastic operations	5	5	...	...	9	1	...	...	...	...
Trephining of skull	2	1	...	...	1	...	1	1	...	...
„ inferior maxilla	...	1	...	...	...	...	...	1	...	...
„ tibia	3	...	...	...	...	2	...	...	1	...
„ os calcis	...	1	...	...	...	...	1	...	...	...
Removal of bone in compound fracture	4	1	...	...	2	...	2	1	...	...
Subcutaneous division of femur	3	4	1	3	3	...	...	...	...	...
„ „ tibia	1	3	...	3	1	...	...	...	...	...
Refracture for deformity	1	1	1	...	1	...	...	...	...	...
Removal of bone for deformity of ankle	...	1	...	...	1	...	...	...	...	...
„ „ talipes	2	...	...	1	1	...	...	...	...	...
For ununited fracture	3	...	...	...	...	1	2	...	...	...
Reduction of dislocation—										
Humerus	2	1	...	...	...	...	1	...	...	2
Forearm	2	...	...	...	...	...	1	...	1	...
Thumb	2	...	2	...	...	...	...	...	...	...
Hip	1	...	...	1	...	...	...	...	...	...
Primary amputation of—										
Forearm	2	...	...	...	1	...	1	...	...	...
Hand and fingers	10	...	...	2	1	3	3	1	...	...
Thigh	3	...	...	1	...	1	...	1	...	...
Leg	3	1	...	...	1	1	...	2	...	...
Toes	6	...	...	...	...	3	1	1	...	1
Secondary amputation of—										
Arm	1	...	...	...	...	...	...	...	...	1
Forearm	1	...	...	...	...	1	...	...	...	...
Thumb	1	...	...	...	...	...	...	...	1	...
Foot	1	...	...	1	...	...	...	...	...	...
Amputation for disease.										
Arm	...	2	1	...	1	...	...	...	...	...
Forearm	1	1	...	...	...	...	1	...	1	...
Fingers	4	2	...	...	...	1	1	4	...	...
Thigh	13	1	...	1	3	3	3	1	3	...

continued.

Duration of residence after operation.								Result.				Remarks.
Under 4 days.	Dys. 5–13	Wks 2–4	Mts. 1–2	Mts. 2–4	Mts. 4–6	Mts. 6–9	Mts 9–12	Above a year.	C.	R.	U.	D.	
...	...	...	...	1	...	...	...	...	1	...	...	...	
...	6	1	...	...	...	...	...	...	7	...	...	..	
...	1	12	2	...	1	...	...	...	12	2	2	...	
...	...	...	...	1	...	...	...	...	...	1	...	...	
...	1	...	2	...	...	...	...	...	1	2	...	...	
1	...	...	...	...	...	...	...	...	1	...	...	...	
...	1	1	1	...	...	...	...	...	...	3	...	...	
...	...	3	4	3	...	...	...	...	5	5	...	...	Lip 3, nose 1, arm 1, thigh 1, foot 1, genitals 1.
...	1	1	1	...	...	...	...	...	1	...	...	2	1 also exploratory puncture of brain.
...	1	...	...	...	...	...	...	...	1	...	...	...	Ostitis.
...	...	...	3	...	...	...	...	...	3	...	...	...	Ditto.
...	...	...	1	...	...	...	...	...	1	...	...	...	Ditto.
...	1	2	...	1	1	...	...	...	2	2	...	1	Skull 1.
...	...	...	1	6	...	...	...	...	6	1	...	...	
...	...	1	3	...	...	...	...	...	4	...	...	...	
...	1	...	1	...	...	...	...	...	2	...	...	...	Humerus 1, femur 1.
...	...	1	...	...	...	...	...	...	1	...	...	...	After excision.
...	...	...	2	...	...	...	...	...	2	...	...	...	Wedge removed from outer side of foot.
...	...	...	1	...	1	1	...	...	2	...	1	...	Forearm 1, femur 1, patella 1.
2	...	...	...	1	...	...	...	...	3	...	...	...	
...	...	2	...	...	...	...	...	...	2	...	...	...	
...	...	...	1	1	...	...	...	...	...	2	...	...	
1	...	...	...	...	...	...	...	...	1	...	...	...	
...	1	1	...	...	...	...	...	...	2	...	...	...	
1	2	5	...	2	...	...	...	...	9	1	...	...	
...	...	1	2	...	...	...	...	...	3	...	...	...	
2	...	...	1	1	...	...	...	...	2	...	...	2	
...	1	1	2	2	...	...	...	...	6	...	...	...	
...	...	...	1	...	...	...	...	...	1	...	...	...	
...	...	1	...	...	...	...	...	...	1	...	...	...	
...	...	...	1	...	...	...	...	...	1	...	...	...	
...	...	...	1	...	...	...	...	...	1	...	...	...	Pirogoff for gangrene.
...	...	2	...	...	...	...	...	...	2	...	...	...	
...	...	...	1	1	...	...	...	...	2	...	...	...	Disease of wrist 1, cellulitis 1.
...	2	4	...	...	...	...	...	...	6	...	...	...	
1	4	3	6	...	...	...	...	...	7	...	...	7	Sarcoma 1, aneurism 1, hæmorrhage 1, ununited fracture 1, necrosis of femur 1, conical stump 1, disease of knee 8.

TABLE III.—

SURGICAL OPERATIONS.	Sex.		Ages.							
	M.	F.	Under 5	5–10	–20	–30	–40	–50	–60	Above 60
Amputation for disease—continued.										
Leg	2	1	...	...	3	...	...	...	...	...
Foot	3	5	1	...	1	2	3	1	...	...
Toes	1	3	...	...	3	1	...	...	...	...
MISCELLANEOUS.										
Paracentesis of chest	2	...	...	...	...	...	2	...	...	...
„ abdominal cyst	1	...	1	...	...	...	...	...	...	...
„ hydronephrosis	4	...	...	4	...	...	...	...	...	...
„ spina bifida	...	1	...	...	...	1	...	...	...	...
Ophthalmic—										
Paracentesis of anterior chamber	...	1	...	...	...	1	...	...	...	...
Iridectomy	...	1	...	...	...	...	...	1	...	...
Strabismus	...	1	...	...	...	1	...	...	...	...
Excision of eyeball	...	1	...	...	...	...	...	1	...	...
Excision of ganglion	1	1	...	...	1	...	1	...	...	...
„ enlarged bursa	1	...	...	...	...	...	...	1	...	...
Incision for abdominal abscess	2	2	...	...	2	1	...	...	1	...
For sinuses	3	2	...	...	1	1	1	2	...	...
Total	379	258								
	637									

continued.

Duration of residence after operation.									Result.				Remarks.
Under 4 days.	Dys. 5–13	Wks 2–4	Mts. 1–2	Mts. 2–4	Mts 4–6	Mts 6–9	Mts. 9–12	Above a year.	C	R.	U.	D.	
...	...	1	1	1	...	...	...	...	3	...	...	...	Infantile paralysis 1, disease of ankle 1, tight cicatrix 1.
...	...	...	4	4	...	...	...	...	6	...	...	2	Syme's amputation: disease of foot 7, ankle 1.
...	2	1	1	...	...	...	...	...	4	...	...	...	
...	1	1	...	...	...	...	...	...	...	2	...	...	
...	...	1	...	...	...	...	...	...	1	...	...	...	
1	3	...	...	...	...	...	...	...	...	4	...	...	
...	1	...	...	...	...	...	...	...	...	1	...	...	
...	...	...	1	...	...	...	...	...	1	...	...	...	
...	...	...	1	...	...	...	...	...	1	...	...	...	
...	...	1	...	...	...	...	...	...	1	...	...	...	
...	1	...	...	...	...	...	...	...	1	...	...	...	
...	...	2	...	..	...	...	...	...	2	...	...	...	Foot 1, wrist 1.
...	...	...	...	1	...	...	...	...	1	...	...	...	
...	...	1	1	2	...	...	...	...	3	1	...	...	
...	1	...	3	1	...	...	...	...	2	2	...	1	Cheek, shoulder, back, hip, thigh.
									477	94	3	63	
									637				

This table does not include operations performed in the Medical, Ophthalmic, Gynæcological Wards, or out-patient departments.

SUMMARY OF DISEASES.

GENERAL DISEASES.

Erysipelas (arising in the Hospital).—M. 37, F. 35, C. 56, D. 16. See Special Table III. Of these 5 cases which arose during the year 1882 are counted, as the patients did not leave until the present year.

Erysipelas (admitted as such).—Males 37, females 25. C. 54, D. 8. Of these 11 were cellulo-cutaneous. Of the head or face 24, arm 10, leg 22, pharynx 1, legs 1, chest 3, groin 1. *Causes.*—Wounds, incised 5, contused 12, lacerated 6, punctured 2; contusions 6; introduction of seton 1; amputation of finger 1; removal of nasal polypus 1; of sebaceous cyst of scalp 1; dog bite 1; burn 1; compound fracture of toe 1; sinus in connection with necrosed bone 1; old fracture of patella 1; patient suffering from lupus 1; varicose veins 1; ulcers or sores 6; ascribed to cold 5; ill-health 1; cause unknown, none apparent 6. 7 cases had a second attack during residence.

Fatal cases.—1. Male, æt 65. Cellulo-cutaneous of left leg commenced 14 days before admission; cause unknown. A second attack came on 5 days after admission, and he died 12 days later. P.M.—No visceral disease.

2. Æt. 68. Also cellulo-cutaneous of left leg; cause unknown. Patient in weakly condition. Commenced 4 days before admission. Lived 10 days. P.M.—Hypostatic congestion of lungs.

3. Æt. 22. Intemperate; cellulo-cutaneous of left leg following a sore on the heel 3 weeks before admission. Lived 2 days. P.M.—Septicæmic condition of organs.

4. Æt. 43. Cutaneous of chest following incision of axillary abscess, and commencing 10 days before admission. Rash extended over trunk, neck, and head, also down right arm. Lived 17 days. P.M.—Pneumonia of left lung; gummata of liver.

5. Æt. 59. Cellulo-cutaneous of right arm following a contusion of olecranon bursa 14 days before. Lived 5 days. P.M.—Granular kidneys.

6. Æt. 64. Cellulo-cutaneous of right arm, cause unknown, commencing 3 days before admission. Lived 1 day. P.M.—Right lung adherent, deeply congested and collapsed; left congested and œdematous. Other organs healthy.

7. Female, æt. 46. Cellulo-cutaneous of right arm, commencing 3 days before

admission and 6 after pricking her finger with a crab shell. Much sloughing. Died from exhaustion. No P.M.

8. Male, æt. 21. ? Erysipelas of pharynx; abscess in neck; pyæmia. A full account of this case given in the report of Throat Department for 1882. See 'Hospital Reports.'

Pyæmia.—(See Special Table II.—Pyæmia.)

Syphilis.—Males 15, females 87. C. 83, R. 16, U. 2, D. 1.

1. *Primary by—*

Indurated chancre.—Males 2, females 3. With phimosis requiring incision 2; with commencing eruption and sore throat 2. *Complications.*—Gonorrhœa 2.

2. *Secondary.*—81. Males 5, females 76. C. 68, R. 11. Unrelieved (refusing treatment) 2. Manifested by the following symptoms:—Condylomata 46, also of tongue, lips, fauces 2; tongue and palate 2; tongue, tonsil, and fissure of tongue 1; tonsils and palate 5; condylomata of ears only 2; of umbilicus only 1; congestion of fauces and tonsils 9; ulceration of tonsils 24, and of fauces 3, or of palate 3, or tongue 2; fissures of tongue 2; sores about genitals 11. Eruptions: roseolar 1; vesicular 5; papular 4; squamous 18; pustular 5; maculæ remaining from previous eruptions 18; gumma of eye 1; ulcers of skin 2; rhagades 1; loss of hair 8; hypertrophy of labia 1. *Complications.*—Gonorrhœa or vaginal discharge 55; phimosis requiring incision and in the same case gonorrhœal rheumatism 1; œdema of labia 2; labial abscess 1; warts 2; bubo 4; cystitis 1; hæmorrhoids 3; fissure of anus 1; fistula in ano and ischio-rectal abscess 1; pregnancy 1; jaundice 2; anæmia with mitral disease 1.

3. *Tertiary.*—Males 7, females 7. Nodes, facial paralysis, and double optic neuritis 1; multiple abscesses due to breaking down of gummata and associated with ague 1; ulcerations of skin 4, of mouth 2, nose 1; induration of muscles of thigh 1; chronic osteitis of os calcis 1; 1 case, female, ulceration of upper lip of some months' duration did not yield to treatment, and exact nature of the ulceration was undetermined; ulceration of cheek 1, of nose 1.

4. *Congenital.*—Male, æt. 32, with ulceration of legs. Female, æt. 15 months, with ulceration of genitals and about anus and marasmus. Died from acute bronchitis.

LOCAL DISEASES.

TUMOURS.

Carcinomata—

4. *Scirrhus.*—33. Males 4, females 29. C. 20, R. 5, U. 2, D. 6.

Breast.—C. 15, R. 5, U. 1, D. 3. Breast only affected in 11; amputation performed in 9; operation refused 2; 1, æt. 42, died from pyæmia after amputation. In the remaining 13 there was glandular enlargement, and in 10 the affected glands were removed at the same time as the breast; in 2 the disease was too extensive, and in 1 operation was refused; 2 died. Æt. 59; bronchitis, &c. No P.M. Æt. 57; erysipelas, secondary growths in pleuræ, lungs, liver, and kidneys. The right side was affected in 16. In 13 no cause

was suggested; in 5 it was attributed to injury; 2 to abscess of the breast; 1 to cracked nipple; 1 to strain; 1 to suckling. In 7 there was a family history of tumours.

Breast (recurrent).—C. 4. Recurred in or near cicatrix, and was easily removed in each case; 1 had erysipelas.

Glands.—C. 1, R. 1. Male, æt. 56. Hard stony growth noticed in cervical glands on left side for 18 months, slow but steady increase. Female, æt. 41. Growth in left axilla noticed for 2½ years, large, fixed, removal with breast, followed by an attack of erysipelas. In each case the growth was a primary glandular one.

Rectum.—M. 3, D. 3. 1 died of pyæmia without having had any operation; 2 died after colotomy; 1 from heart disease and pneumonia; the other from general secondary growths.

Epithelioma.—Males 35, females 8. C. 14, R. 18, U. 3, D. 8. *a. Tongue.*—Males 11, C. 2, R. 5, U. 2, D. 2. Involving the tongue only 1; in 6 the glands under the jaw were enlarged; floor of the mouth and glands affected in 2; tonsil and glands 2. The cause given in 4 cases was irritation of a tooth; possibly due to excessive smoking 1; in the remainder no cause was assigned; in 2, however, there was a distinct history of syphilis; excision of the growth 1; excision of tongue, laryngotomy having been previously performed, 1; excision of tongue after division of jaw and cheek 1; excision of growth after similar procedure 1; the 2 last named terminated fatally. Æt. 42; from broncho-pneumonia. Æt. 70; from erysipelas.

b. Mouth.—Males 6, females 1. C. 1, R. 5, D. 1. Upper jaw affected in 1 case; floor of mouth in the remainder; also in 1 lower jaw; 1 lower jaw and cheek; tonsil and glands 1; 2 glands; the mucous surface of cheek only 1; 2 cases of recurrent growth; 1 growth treated by scraping; 1 by excision.

Fatal case.—Female, æt. 20. Floor of mouth and glands in neck; exhaustion, No P.M.

c. Lip.—Males 10. C. 8, R. 1, D. 1. Operation performed in all; 2 cases of recurrent growth; erysipelas followed operation in 1.

Fatal case.—Æt. 53. Disease affecting lip, angle of mouth, and glands. Died with symptoms of pleurisy after removal.

d. Cheek.—Female, æt. 84. Probably recurrent growth. Had erysipelas after removal; cured.

e. Gland.—Male, æt. 56. Submaxillary, 5 months after removal of epithelioma of lip; removed.

f. Larynx.—Male, æt. 43. Possibly tubercular; relieved by tracheotomy.

g. Generative organs.—Male 1, females 5. C. 1, R. 3, U. 1, D. 1. Male. æt. 60; of penis; amputation. Female, uterus affected, æt. 24; abdominal section performed, but growth too extensive for removal. Æt. 53; died after removal of uterus and ovaries,

h. Digestive tract.—Males 5, females 1. R. 3, D. 3. Of œsophagus causing stricture 4 (1 readmission); the fatal cases, æt. 40, æt. 63, died after gastros-

tomy; æt. 42, after prolonged retention of catheter. Of rectum: Male, æt. 39; part of growth removed. Female, æt. 46; also partial removal.

Sarcoma.

a. Face.—Male, æt. 51. Involving left cheek; ala of nose and glands under jaw. Albuminuria.

b. Skull.—Male, æt. 16. Involving left temporal fossa, antrum, glands in front of ear; facial paralysis, with anæsthesia on left side; also some loss of vision in left eye, with commencing neuritis.

c. Jaw.—a. Upper: Female, æt. 64. Growth involving right antrum and displacing the eye, too extensive for removal. *b.* Lower: Male, æt. 45. Tumour under tongue, in middle line, growing from symphysis of jaw; removal of growth with portion of jaw from which it was growing; microscopically small round-celled growth; recovered. Male, æt. 57. Small round-celled growth involving right side of jaw; removed with portion of bone affected; an outlying nodule also was removed from substance of sterno-mastoid muscle; cured. Female, æt. 52. Right half of jaw removed for growth commencing in the interior; 13 days later severe attack of secondary hæmorrhage, followed by erysipelas next day, and death a week later.

d. Tonsil.—Male, æt. 43. Growth noticed for 6 months; right tonsil and glands in neck and under jaw affected; relieved.

e. Abdominal wall.—Male, æt. 56. Small round-celled growth of skin; removed; cured.

f. Pelvic bones.—Male, æt. 48. Growth of large size from left side of pelvis; relieved.

g. Upper extremity.—Female, æt. 19. Round-celled growth of left humerus, 12 months; amputation refused; partial removal; relieved; readmitted with more extensive local growth and involvement of axillary glands; partial removal again performed; result unsatisfactory; relieved.

h. Lower extremity.—Males, 5. Æt. 18; myeloid sarcoma of lower end of left femur; 3 months' growth; amputation of thigh; cured. Æt. 18; growth of lower end of right femur, duration 3 months; probably myeloid; operation refused; relieved. Æt. 75; small growth on front of right leg, noticed for 40 years; rapid increase in size for 2 months, with occasional hæmorrhage; operation refused; relieved; readmission; growth removed; cured. Male, æt. 31. Growth involving left tarsus for 12 months; removal; mixed character, spindle- and round-celled.

i. Breast.—Females 6. Æt. 28, married; affecting both breasts, noticed for 5 months; relieved; on readmission 2 months later double amputation was performed; when the wounds were nearly healed she contracted erysipelas, dying 2 days later from secondary deposits in internal organs; microscopically the growth was irregularly round celled, the cells being of moderate size and similar in character in the different growths. Female, æt. 51, married; cystic growth in right side of 2 years' duration; amputation of breast; cured. Recurrent growth, æt. 43, 47, 63; recurrence noticed 10 months, 14 days, and 10 months respectively, æt. 47, too extensive for removal.

j. Lymphatic glands.

Neck.—Males 3, female 1. Male, æt. 47; axillary growth following incision of abscess; 9 months. Male, æt. 29; groins; duration uncertain; admitted with tertiary syphilis. Male, æt. 14; recurrent growth of cervical region; 17 months; primary growth removed 5 years before; incomplete removal. Female, æt. 53; glands above right clavicle; 3 months. In three of these cases the growth was too extensive to permit of successful removal.

Ovarian disease.—C. 13, R. 2, U. 3, D. 5.

Relieved.

1. Æt. 22. Was in hospital last year. See Surgical Report, p. 79, case 4, relieved. Still suffering from parametric exudation in addition to presence of small moveable tumour on right side of pelvis. Was in hospital 70 days.

2. Æt. 28, married, no children. Vague abdominal pains for 3 years; swelling noticed for 3 months, with pain on micturition; apparently exudation round the uterus somewhat fixing it. Was under observation for 33 days.

Unrelieved.

1. Æt. 35, married. Tumour, noticed 9 months; had a miscarriage in 6th month, 4 months after it was noticed. Tumour in right iliac region; patient 3—4 months pregnant.

2. Æt. 43, married. The patient refused treatment, leaving the same day and giving no history.

3. Æt. 37, married, 4 children. Tumour noticed 12—16 months; was in hospital 6 days. She returned later, and was successfully operated upon. See Case 1, cured.

Cured.

1. Æt. 37 (see preceding case). Ovariotomy was performed on the 3rd day after admission, and she left 30 days later. There was a unilocular cyst connected with left ovary, and without adhesion.

2. Æt. 39, married, no children. Pain in right lower abdomen, followed by swelling, 3 years ago. A unilocular cyst connected with right ovary, and containing 19½ pints of fluid, was emptied and removed. Stay in hospital prolonged by formation of an abscess along line of a suture.

3. Æt. 32, widow, 5 children. Swelling of abdomen for 18 months. Large solid tumour weighing above 3 lb. was removed from left side, and 31½ pints of ascitic fluid removed from abdomen. Recovery retarded by abdominal pain, some purulent discharge from the wound when apparently healed, and by diarrhœa.

4. Æt. 29, married, 3 children. Swelling of abdomen noticed for 3½ years. Growth partly cystic connected with right ovary removed, as also the left ovary which was enlarged and cystic. This patient suffered from cardiac disease, the result of rheumatic fever, but left 31 days after operation.

5. Æt. 38, married, one child. Swelling noticed for 18 months. The left ovary was attached and flattened on a cystic growth growing from the broad

ligament, and was removed with it. The right ovary was healthy. She left 31 days after operation.

6. Æt. 44, married, 1 child, 3 miscarriages. Swelling of abdomen noticed from 9 to 12 months. A multilocular cyst removed from right side. Numerous and firm adhesions. Left 31 days after operation.

7. Æt. 52, married, 4 children, and 4 miscarriages. Swelling of abdomen noticed 4 months ago. Multilocular tumour, having one or two firm peritoneal adhesions, removed. Left the hospital 41 days after operation.

8. Æt. 51, married, 5 children, 1 abortion. Symptoms commenced 12 years ago. At the operation 21 pints of ascitic fluid, and a semisolid tumour of the right ovary removed, the vermiform appendix was adherent, and there were evidences of old peritonitis. During convalescence she suffered from constipation and had an attack of vomiting, with severe abdominal pain and rise of temp. to 102·4°, 2 months after the operation. Left hospital 85 days after operation.

9. Æt. 59, married, 1 child. Enlargement of abdomen noticed for 2 years. The subject of chronic rheumatism. Was tapped 4 months before admission. A single cyst was removed after emptying of its contents, and the separation of numerous firm adhesions, some of which were to the liver. She had slight cystitis after operation. The patient left cured 32 days after operation.

10. Æt. 56, single. A tumour noticed in left groin, 4 or 5 years. A large cyst was emptied of 14 pints of fluid, and the cyst wall, with numerous smaller cysts, removed; the right ovary was healthy. This patient had some cystitis after the operation, but left cured 31 days after the performance of the operation.

11. Æt. 26, single. Five months before admission had "stoppage of the bowels." She then noticed a swelling. Was tapped 3 months ago. A multilocular cyst was removed after the separation of some fine adhesions to abdominal wall in front and to the right. The fluid measured 29 pints. The left ovary was healthy. Left cured 29 days after operation.

12. Æt. 18, single. Tumour noticed 5 months; had been losing flesh for 5 months before that. A solid sarcomatous growth of right ovary, weighing 6½ lb., was removed; 4 pints of ascitic fluid escaped. There was no bad symptom, and patient left cured 22 days after operation.

13. Æt. 19, single. Began with severe abdominal pain and sickness 3 months before admission. She had not noticed abdominal swelling. The tumour, which consisted of a largish cyst containing 4½ pints of fluid, and of smaller ones, was connected with the right ovary. Convalescence was retarded by formation of parotid bubo, but she left cured 33 days after operation.

Died.—5. Four after operation.

1. Æt. 50, married, 8 children. Tumour found when she was examined for menorrhagia 5 years before admission. A tumour springing from the left ovary, consisting of a large and several smaller cysts, was removed; there were a few adhesions which required ligatures, and there was a thickish layer of semi-

organised fibrin over the front of the tumour. Died from acute peritonitis 5 days after operation.

2. Æt. 33, married. Tumour noticed 13 months; producing some symptoms due to pressure. The tumour, which weighed 12 lb. 14½ oz., had several adhesions, and consisted of multiple small cysts. She died 2 days after operation from acute peritonitis.

3. Æt. 47, single. Catamenia irregular for 18 months. Swelling of abdomen noticed for 8 months. She was in Adelaide Ward for a month, and whilst there suffered from bronchitis and jaundice; the cyst was tapped in order to relieve respiration, and more than 8 pints of fluid drawn off. The cyst suppurated, and 27 days after the tapping the seam gave way, allowing escape of offensive purulent fluid; 9 hours later operation performed. Cyst wall somewhat fairly adherent generally; intestines injected and much matted together, having on their surface large flakes of lymph. It was apparently connected with left ovary. She died 2 days after operation, probably from peritonitis. No P.M.

4. Æt. 46, single. Swelling of abdomen noticed 10 years; lately some menorrhagia. A single cyst, containing 7 pints of fluid and weighing 2 lb. 1 oz. removed; no adhesions. Died 8 days later, with a temp. of 106·8°. P.M.—The left ovary healthy, displaced with uterus to the left, the sigmoid flexure and rectum being on the right side. Recent general peritonitis, with semi-purulent fluid. Early stage of granular kidney.

5. Æt. 53, married, 4 children. Large multilocular tumour noticed 15 months. Died 3 days after an examination from acute peritonitis due to rupture of a small cyst. Pain came on 15 minutes after the examination, and she passed into a condition of collapse, not rallying sufficiently to admit of operation. No P.M., but examination confined to abdomen proved the rupture of a thin cyst, and recent peritonitis resulting.

CIRCULATORY SYSTEM.

Aneurism—

a. Femoral.—Male, æt. 29. A china packer. Patient had a history of syphilis and also of rheumatic fever, had noticed pulsation, in position of aneurism, for 8 months. Large oval swelling in position of Hunter's canal on left thigh, pulsating; extensive valvular disease with cardiac hypertrophy. Digital pressure over the femoral kept up for 6 hours cured the aneurism, and the patient left 4 weeks afterwards.

b. Popliteal.—1. Male, æt. 52. Nil. Syphilitic history. Swelling in left popliteal space for 1 month. Large aneurism. Digital pressure tried without success for 17¾ hours. Two days later the superficial femoral artery was ligatured. He left cured about 70 days later.

2. Male, æt. 38. A porter. Suffering from extensive valvular disease, and hypertrophy of the heart. Large aneurism of right popliteal space. Digital compression tried for 9 hours, was followed by gangrene of the leg, requiring

amputation of the thigh, this operation proving fatal 11 days later from pyæmia. No P.M. The aneurism was preserved for the museum.

3. Male, æt. 64. Plasterer. No history of syphilis, or of rheumatism. Severe pain in right popliteal space 6 months before admission, a pulsating swelling having been noticed 6 weeks. Large aneurismal swelling in right popliteal space, aortic disease, atheromatous vessels generally. Digital compression for 12½ hours was followed by consolidation; gangrene followed in 6 days, and the patient died three weeks after the compression of femoral. P.M.—Ruptured popliteal artery, the effused blood collecting in tissues and forming a cavity for itself, by pressure. Early interstitial nephritis.

DIGESTIVE SYSTEM.

Hernia.—(See Special Table I—Hernia.)

Fistula in ano.—Males 22, females 5. C. 22, R. 4, Died 1. In 2 history of previous fistula, 10 family history of phthisis, of which number 3 had decided symptoms of the disease, 4 it was not known by the patient, the remaining 13 did not give any history of fatal chest mischief. *Complications.*—External hæmorrhoids 1; chronic cough 5; measles 1; operation in 21 cases, one patient undergoing two operations. The fatal case was from administration of chloroform; he had undergone operation earlier in the year for fistula.

Intestinal obstruction.—D. 3. Males 2, female 1.

1. Male, æt. 26. Symptoms commenced suddenly 6 days before admission, with severe constant pain in the abdomen, followed later by abdominal distension, urgent vomiting, and constipation. At operation there was found to be extensive peritonitis and unequal distension of small intestine, and it appeared at one spot as if there had been a constriction by a hand; this was not, however, found P.M., but was felt to give at the time. Patient died within 24 hours. At the P.M. extensive peritonitis and acute enteritis was found.

2. Male, æt. 59. Losing flesh for 5 weeks, some difficulty in passing motions for 1st week, and for the last fortnight diarrhœa. Tumour formed between bladder and rectum, abdominal distension, urethral stricture. Troublesome hiccough came on, and there being no improvement in local or general condition, left lumbar colotomy was performed. Patient lived 5 days. P.M.—Abscess between bladder and rectum, opening into bladder, chronic inflammation round large intestine, obstruction of sigmoid flexure, pneumonia.

3. Female, æt. 44, married. Was in hospital, 1881, for intestinal obstruction (See Surgical Report, p. 374, Case 3, Obstruction of bowels). She passed fæces per rectum for 1½ years afterwards, but for the last year all fæcal matter has passed by a tube. For 14 days no discharge from either tube or rectum, now constant vomiting and abdominal pain. The opening in left loin was dilated, and a large quantity of hardened fæces removed, also a drainage-tube, which she had left in. She lived 4 days. New growth found P.M., 6 inches from anus, surrounding gut, and reducing lumen to size of No. 8 catheter, enlarged glands

near, growth pressed on left ureter, causing dilatation above of ureter and pelvis of kidney. Secondary growths found in liver. Nature of growth probably scirrhus.

GENITO-URINARY SYSTEM.

Hydrocele.—C. 6, R. 1. Right 3, left 4. The present collection of fluid in existence for a year or more in 3, 10 months 1, 3—5 months 3. There had been numerous tappings in 1, 5 times 1, three times 1, twice 1, once 1. No previous tapping 2. *Treatment.*—Simple tapping 2, ditto followed by injection 3, in one case the hydrocele was tapped 3 times; on the last occasion iodine was injected. One case, incision made antiseptically. One case the injection of iodine was followed by orchitis.

Retention of urine.—M. 20, C. 18, R. 1, D. 1. Fourteen due to stricture of the urethra, 2 to enlargement of the prostate, 3 phimosis, 1 spasmodic. *Treatment.*—Warm bath 10, with opiate 1, afterwards catheter 8, still later perinæal section 1; catheterism only 4, circumcision 3, perinæal puncture 1. In 2 internal urethrotomy was performed, in one case there was somewhat free hæmorrhage afterwards. *Complications.*—Hæmaturia 2; rigors 1; rigors, perinæal abscess, cystitis, and erysipelas 1; perinæal abscess 1; and in fatal case, æt. 75, where patient had suffered from urinary trouble for some months, cystitis and uræmia. P.M.—Pelves of kidneys dilated, prostate generally enlarged, bladder dilated and hypertrophied; mucous membrane in state of chronic inflammation.

Stricture of Urethra.—C. 20, R. 5, D. 3. Traumatic 3, following gonorrhœa 25. *Complications.*—Gonorrhœa 1, retention 3, incontinence of urine 1, extravasation 1, perinæal abscess 3, perinæal fistula 4, enlarged prostate 2, cystitis 9, slough in perinæo 1, calculi in perinæal fistulæ 1, rigors during treatment 5, hæmorrhoids 1, cardiac disease and œdema of legs 1, jaundice 1; one patient had two attacks of erysipelas. *Treatment.*—Baths only, 1, one refused treatment; continuous dilatation by means of catheters 3, interrupted 14, forcible 1; operations: internal urethrotomy 4, perinæal section 4. P.M. of fatal cases.

Male, æt. 50, farm labourer. Old stricture of urethra, hypertrophy and inflammation of bladder, inflammation of ureters and kidneys. (Interrupted catheterism with washing out of bladder.)

Male, æt. 56, labourer. Traumatic stricture of urethra of 16 years' duration. Cystitis, perinæal section. P.M.—Acute inflammation of mucous membrane of bladder with adherent phosphates; kidneys healthy.

Male, æt. 38, coachman. Stricture following gonorrhœa, urethral abscess, extravasation of urine; perinæal section; chronic inflammation of bladder with adherent phosphates; kidneys and ureters healthy.

Extravasation of urine.—C. 5, D. 1. In 3 cases there was stricture of the urethra, in 1 no cause could be found, 1 followed rupture of the urethra from blow, 1 slight, followed extraction of urethral calculus. Of the successful cases, 2 had evidence of extravasation of urine for at least 24 hours, 1 for 48 hours, 1 for 9 days, and 1 for 14 days; 2 of these had cicatricial deformity of penis and

cystitis. In 4 perinæal section followed by incisions was required, 1 incisions only.

Fatal case.—Æt. 40. Extravasation noticed over lower abdomen for 2 days. Incisions and perinæal puncture, sloughing, exhaustion. P.M.—Stricture, pyelitis, early nephritis, pericarditis.

Calculus vesicæ.—Males 10, female 1. C. 7, D. 4.

Successful cases, males 6, female 1. Symptoms noticed for 3 days, (2 for) 3 weeks, 1 month, 6 months, 18 months, and 7 years. Operations performed: lithotrity 2, lateral lithotomy 5. Nature of calculus: oxalate of lime 3, uric acid and urate of soda 3. One patient had a small stone removed by lateral lithotomy 7 months before, in another the patient was admitted for calculus urethræ, which was removed by section 6 days before the vesical calculus. In one case there was troublesome hæmorrhage after lithotomy, in another case orchitis developed after the same operation.

Died.

Males 4. In 3 lateral lithotomy, in the 4th no operation.

1. Æt. 14. Symptoms for 3 years. Calculus of uric acid with coating of phosphates; lived 3 months. P.M.—Chronic disease of bladder and kidneys; amyloid disease of spleen.

2. Æt. 12. Symptoms for 5 weeks. Oxalate of lime stone removed from bladder and another from the right ureter at the same operation. P.M.—Pyelitis of right kidney, acute peritonitis.

3. Æt. 3. Symptoms for 6 months. The operator was unable to find the stone at time of operation, but removed it next day. This patient died from acute peritonitis. Calyces of kidneys rather dilated and a little injected.

4. Male, æt. 66. Symptoms referred to bladder 12 months, weak and low; bladder washed out; lived 3 days. P.M.—5 phosphatic calculi, prostatic abscess, cystitis, cystic kidneys, peritonitis, rheumatoid arthritis.

Urethral.—Male, æt. 5. Symptoms 7 days, retention of urine for 24 hours. Impacted oxalate of lime calculus removed by perinæal section, circumcision also performed; cured. See also Calculus Vesicæ.

Renal.—Æt. 20. Symptoms of calculus, pyelitis for 18 months, and stone removed from the right kidney by incision from lumbar region; uric acid and urate of soda.

Gonorrhœa (admitted as such).—Females 49. C. 42, R. 7. *Complications.*—Warts 23; bubo 2; œdema of labia 3; labial abscess 2; enlarged glands 10; sores, result of discharge, 3; ulceration of rectum 1; fissure of rectum 2; scabies 2; pediculi 1; acne punctata 1; enlarged tonsils 2; tubercular laryngitis 1; pregnancy 1. As a complication of syphilis 57; of soft sore 9.

Soft Sore.—Males 9, females 16. C. 22, R. 3. Phagedænic: males 5, females 2. *Complications.*—Gonorrhœa 9; phimosis 6, in each case requiring incision for relief; warts 1; adenitis 5; bubo 3; œdema of labia 6; abscess of labium 1; fissure of anus 1; hæmorrhoids 1; enlarged tonsils 2; periosteal pains and dysmenorrhœa 1; cardiac disease and rheumatism 1; jaundice 1.

DISEASES OF LOCOMOTORY SYSTEM.

Of hip-joint.—Males 35, females 44. C. 24, R. 51, D. 4. *Incipient* (1st stage).—Males 14, females 15. C. 12, R. 17. Of right hip-joint 18; left 11. Ascribed to injury 15; rheumatism 1; cause not known 13. Family history of phthisis 3, of chest complaints 2; history good 13, of doubtful character 3. *Complications.*—Cystitis 1; enlarged glands 2; diarrhœa 1; pertussis 1. *Chronic* (2nd and 3rd stages).—Males 20, females 24. C. 10, R. 30, D. 4. Of right hip-joint 17; left 26; both joints 1. *Cause given.*—Injury (usually a fall) 28; no cause known 14; typhoid fever 1; measles 1. In 15 cases there was well-marked abscess; sinuses 5; displacement of the head of the bone 10; 1 had disease of both hip-joints, one of which had probably been excised, and in a boy of 16 there was a history of operation at the age of 3 months; aspiration of abscesses in 6 cases; excision of head of femur 6; removal of necrosed bone 1; 1 case 3 admissions. In 10 there was a family history of phthisis; in 27 the family history was good, with one exception, the mother suffering from hip disease; 1 developed phthisis; history unknown 7. *Complications.*—Enlarged glands 2; hæmaturia 1; pertussis 1. Rheumatism: C. 1, R. 1. Old excision: R. 3. Hysterical: C. 1.

Fatal cases.—Female, æt. 1 year 10 months. Some pain in left hip for about a week before admission. Large abscess opened, and later a piece of dead bone removed through the incision; œdema of right leg. P.M.—Disorganisation of hip-joint; right third costo-sternal articulation filled with pus and disorganised; collapse of lower lobe of lung.

Male, æt. 2. Slight symptoms of disease in left hip-joint following a fall 3 weeks before. Family history of phthisis. Lived 16 days. P.M.—Tubercular meningitis; general tuberculosis; tubercle of choroid.

Male, æt. 11. Admitted with disease of right hip-joint, which had commenced a year before, and gone on to dislocation of the head of femur and formation of sinuses in upper part of thigh. Died 2 days after excision. P.M.—Chronic tubular nephritis and early amyloid disease.

Female, æt. 44, married. Family history, as in the preceding case, good. Symptoms followed a blow 15 months before admission, when there was displacement of the head of the femur; abscess developed later. She died 211 days after admission and 5 after an attack of erysipelas. P.M.—Left leg swollen; numerous superficial sloughs. Caries of the displaced head of femur, of acetabulum, and ischium. Recent pleurisy of right lower lobe.

Of knee-joint.—Males 32, females 31. C. 23, R. 35, U. 1, D. 4. Of right knee 28, left 34, both knees 1. *Incipient.*—Males 8, females 5. C. 6, R. 6, U. 1. Of right knee 6, left 6, both 1. *Cause.*—Injury 7; twist of the joint 1; cause unknown 2; gonorrhœa 1; syphilis (acquired) 1, (congenital) 1. Family history: of phthisis 3, of gout 1. *Complications.*—Syphilitic necrosis of frontal bone 1; interstitial keratitis and ulceration of larynx 1; enlarged bursæ about joint 2. Paracentesis of joint performed in 2 cases. *Chronic.*—M. 19, F. 14. C. 9, R. 20, D. 4. Of right knee 16, left 17. *Cause given.*—Injury 16; rheu-

matic fever 1; after parturition 3; suppuration of bursa 1; doubtful 12. Family history good 28, of tubercle 1, not known 4. Admitted 3 times 1, twice 1. Suppuration in joint 8; incisions 4; excisions 5; partial excision 1; amputation 7; refused amputation 1; forcible movement under ether 1. *Complications.*—Disease of hip 1, of spine 3; phthisis 2; albuminuria 1; contracted erysipelas 4; scarlatina 1. *Anchylosis.*—Male 1, females 7. C. 4, R. 4. Of right knee 2, left 6. *Cause.*—Injury 3; fracture of patella 1; periostitis of tibia 1; rheumatic fever 1; use of hip splint 1. Family history of phthisis 1, good 7. *Complications.*—Latent hip disease 1; tubercular ulceration of fauces and larynx 1. *Old excision.*—M. 2, F. 1, C. 1, R. 2. Of right knee 1, left 2. Admitted with sinuses 1; incomplete union 1; for apparatus 1; contracted pertussis 1. *Rheumatoid.*—Male 1, females 3. C. 2, R. 2. Gonorrhœal 1; rheumatoid arthritis 3. *Loose cartilages.*—Male 1, female 1. C. 1, R. 1. Right 1, left 1. The female treated by rest; male, excision of the body was followed by suppuration in the joint; free incisions made 3 days after removal, and 19 days after removal amputation performed. *Causes.*—Rheumatoid changes in joint 2.

Fatal cases.—Æt. 26, married. Symptoms commenced 9 days after parturition a month before she was admitted. Suppuration in right knee treated by free incision, and later (18 days) amputation. Pyæmia (q. v.). No P.M.

Male, æt. 27, farm labourer. Disease of right knee for 8 months; sinuses formed under observation; amputation of thigh. Died 9 days later from pyæmia (q. v.). P.M.—Pyæmia; acute tuberculosis; caries of dorsal spine.

Male, æt. 35, labourer. Admitted with suppuration of left knee-joint; symptoms for 2 to 3 years; worse 4 months. Free incisions followed by amputation in 8 days' time, after which he lived 11 days. Suppurative nephritis.

Male, æt. 62, actor. Symptoms of disease of right knee 6 months; sinuses for 6 weeks; incisions made. Amputation of thigh 10 days before death from bedsores and exhaustion. P.M.—Internal organs apparently healthy.

Of ankle-joint.—Males 6, females 7. C. 8, R. 6, U. 1. Right joint diseased 3, left 10. *Incipient.*—Males 2, females 1. C. 3. Of right joint 2, left 1. Family history good 2, unknown 1. *Cause.*—Rheumatic fever 1, ? 2. *Complication.*—Whitlow 1. *Chronic.*—Males 2, females 6. C. 3, R. 5. Of right foot 1, left 7. Family history of phthisis 4, good 2, unknown 2. *Cause.*—Sprain 1; rheumatism 1, ? 6; suppuration in joint requiring incisions and amputation of the leg 1; Syme's amputation 1; excision of joint 1. *Complications.*—Anchylosis of shoulder 1; contracted measles 1; erysipelas of face 1. *Old excision.*—Female 1. Left foot; deformed.

SUMMARY OF INJURIES.

GENERAL INJURIES.

Burns.—Males 20, females 13. C. 16, R. 1, D. 16. General 11; face 4; face and chest 1; face and upper extremity 3; head, neck, and hand 3; upper extremity 1; upper extremity and chest 4; trunk 1; chest and lower extremity 1; lower extremity 4. *Causes.*—Fall on the fire 3; wearing apparel catching fire 7; setting muslin on fire 1; treading on hot poker 1; contact with red-hot bottle 1; contact with hot-water bottle whilst in a fit 1; hot magnesium wire 1; explosion or upset of paraffin lamp 6; explosion of gas 1; sulphuric acid 1. *Complications.*—Conjunctivitis 1; epilepsy 1. See also Fatal cases.

Treatment (primary).—Carron oil 25; carbolic oil 2; terebine and oil 1; Ol. Olivæ and Zinc. Oxide 1; chlorinated soda lotion 1; Cat. Lini 1; warm bath (100°) 1.

Fatal cases.—Males 11, females 5. Æt. 1½, 2, 2, 3½, 5, 7, 8; shock. Æt. 4; shock and convulsions. Æt. 4; diarrhœa, convulsions, exhaustion. Æt. 2½; exhaustion. Æt. 36; diarrhœa and vomiting. Æt. 3; diarrhœa, vomiting, and cardiac thrombosis. Æt. 2; varicella and diarrhœa. Æt. 3; pertussis and bronchitis. Æt. 19; nephritis and suppression of urine. Æt. 65; phthisis.

Scalds.—Males 22, females 11. C. 25, R. 1, D. 8. General 4; face and neck 1; face and arm 1; face, arm, and trunk, 5; mouth and fauces 3; upper extremity 2; chest 4; trunk 7; lower extremity 6.

Causes.—Fall into the copper 3; attempt to suck the spout of the kettle 3; upset of kettle 7; saucepan 5; teapot 1; teacup 10; hot milk 1; cocoa 2; coffee 1.

Complications.—Glandular swellings 1; diarrhœa 1; vomiting 1; erysipelas 1.

Primary treatment.—Steam kettle 3; carron oil 24; terebine and oil 3; vaseline 1; vaseline with iodoform 1; Cat. Lini 1.

Fatal.—Males 4, females 4. Æt. 4, 7, 16 months; shock. Æt. 11 months; convulsions. Æt. 15 months; hæmatemesis and convulsions. Æt. 18 months; vomiting, diarrhœa, convulsions. Æt. 12 months; exhaustion. Æt. 12 months; pneumonia.

LOCAL INJURIES.

HEAD.

Scalp Wounds.—Males 31, females 11. C. 37, R. 4, D. 1. Exposed bone in 14, in 1 followed by necrosis; hæmorrhage marked 8; leading to syncope 1; wound of temporal artery 2; traumatic aneurism of supra-orbital 1; protrusion of the eye from hæmorrhage into the orbit 1; epileptic 2; history of slight concussion 7; foreign bodies required removal 2. *Complications.*—Wound of lip 2; ear 1; thigh 1; fracture of radius 1; contusion of ankle 1; carbuncle 1 (suicidal attempt); religious mania 1 (also attempted suicide); rheumatism 1; contracted erysipelas 4, of whom 1 died.

Fatal case.—Male, æt. 28. Alcoholic, severe scalp wound and wound of face, contused. Fracture of radius. Six days after admission erysipelas developed, suppuration in scalp, followed by death 23 days later. P.M.—Slight cirrhosis of the kidneys, no marked change, other organs fairly normal.

Concussion.—Males 32, females 4. C. 35, D. 1. Irregularity of pupils in 7; hæmorrhage from the ear 4; from the nose 1; under the conjunctiva 1; delirium 1; convulsions 2; in 1 followed by hemiplegia; shock a marked result of the injury 3. Other injuries: scalp wound 2, in 1 bone exposed; contusions of arm 1; chest 1; face 1; fracture of nasal bones 1; retention of urine, 2.

Fatal case.—Male, æt. 71. Died 4 days after fall from scaffold; concussion, fracture of ribs, hæmorrhage into spinal cord.

Fractures of the skull.—The vault.—Males 8, females 5. C. 7, R. 1, D. 5.

A. 1.—*Simple, depressed.*—Female, æt. 10 months. Over posterior part of right parietal bone.

Male, æt. 56. Lived 24 hours, fracture across the vault, extravasation of blood on surface of brain; fracture of fibula.

B. 1.—*Compound.*—Males 3, female 1. Æt. 53; caused by a hatchet used with suicidal intent, he had also numerous wounds of scalp, and of genitals, retention of urine. Æt. 20; fracture of frontal bone into orbit, also scalp wounds. Æt. 30; fracture of frontal extending towards the orbit. Female, æt. 32; severe scalp wounds and fracture of right parietal.

(2) *Compound depressed.*—Male 1, females 3. Male, æt. 21; bullet wound, suicidal, temporal on left side, hemiplegia. See 'Lancet,' June 7th, 1884. Female, æt. 64; fracture behind the left ear. Æt. 37; fracture extending into the left frontal sinus. Female, æt. 44. Lived 50 days; depressed fracture of left parietal, causing no symptoms until 8 days after admission, then drowsy and temp. 104·8°, and headache. This passed away and she was allowed to get up. 27 days after injury several epileptiform seizures, affecting chiefly right arm and leg and followed by aphasia and drowsiness; 9 days later two more fits, followed by right hemiplegia. Trephining 43 days after injury, a teaspoonful of pus was found under fracture. No improvement in symptoms. Double optic neuritis developed. Incision made through dura mater allowed escape of a small quantity of pus from beneath it; died; temp. 106·6°. P.M.—Adhesion of the

dura mater and softening of parietal lobe on left side and abscess the size of a small walnut in lower part of the two ascending convolutions. Contrecoup bruising at base; slight meningitis.

3. *Compound comminuted.*—Male, æt. 29; gunshot, entering right parietal and lodging in the brain; another bullet had passed above the 7th rib, carrying a small piece to a position behind the spleen, not injuring the lung, but producing peritonitis; lived 4 days. Female, æt. 2¾; run over, only living half an hour. Extensive comminution of vault and protusion of brain substance. Male, æt. 16; lived 23 days; fracture of left parietal, pieces of bone removed the day after admission, and again 15 days later. Right hemiplegia with aphasia. Double optic neuritis; pyæmia (q. v.). P.M.—In addition to the large opening in left parietal, with three radiating fractures of the vault, and the suppuration in or about joints, there was softening of cortex of left hemisphere behind the fissure of Rolando, with some extravasated blood, and marked diminution in size of hemisphere.

Fractures of the base.—Males 24, females 3. C. 15, R. 2, D. 10.

Cured or relieved.—Males 15, females 2. Of these 2 were epileptic. Hæmorrhage from ears in 2; from left ear 5; right 4; nose 6; sub-conjunctival 4; ecchymosis of mastoid 4; in one followed by abscess, in this case there was trephining; hæmatemesis 1; irregularity of pupil 4; internal strabismus 2; facial paralysis 5; delusions 2; great restlessness 5; optic neuritis ; contusion of thigh 1; scalp wounds 9; fracture of inferior maxilla 1; of ribs 2, one developed bronchitis; of scapula 1.

Fatal cases.—Males 9, females 1.

Males.—Æt. 27. Lived 1 day. Comatose condition, quite insensible to external impressions. P.M.—Just behind the external occipital protuberance was a triangular fracture with the apex forwards involving both tables, the right line extended into the superior and inferior fossæ and across the lateral sinus which it opened, as far as the petrous bone. Much black effused blood beneath dura mater chiefly over the right hemisphere.

Æt. 45. Lived 1 day. Much collapse, amputation of right foot for crush, fracture of left femur in two places, fractures of 3rd—8th ribs and emphysema. P.M.—Fracture of roof of left orbit and sub-conjunctival hæmorrhage.

Æt. 17. Lived 1 day. Much collapse, right hemiplegia and left ptosis, hæmatemesis and epistaxis, restlessness and stertor. P.M.—Extravasation of blood in scalp, fracture extending from above left zygoma downwards and forwards into middle fossa to apex of petrous bone. Laceration of superior petrosal and straight sinuses. Laceration of the two lower transverse frontal convolutions.

Æt. 24. Lived 4 days. Semi-conscious and suffering from shock, had hæmorrhage from nose and mouth before admission, great restlessness, convulsions, became comatose on 4th day; dying in a few hours. P.M.—Fracture on left side beginning at cavernous sinus and extending through jugular foramen posteriorly across posterior fossa up to lambdoidal suture, and for a short distance into parietal bone; meningeal hæmorrhage; laceration of brain.

Æt. 45. Died 5 days after admission with symptoms of compression, he was unconscious at first, but became conscious, continuing so for three days; hæmor-

rhage and discharge from left ear, left facial paralysis, restlessness. P.M.—Extensive comminution of left petrous bone, lines of fracture running in various directions, one passing through ring of bone round the membrana tympani, there was rupture of the membrane and laceration of facial and auditory nerves. Hæmorrhage between the bone and dura mater, between the dura mater and brain, and into the substance of the brain.

Æt. 4. Lived 6 days. No loss of consciousness, hæmorrhage from each ear; restlessness; constant vomiting during the whole time, apparently died from exhaustion. P.M.—Fracture on the right side between the petrous and squamous bones, extending as far as carotid foramen. No apparent injury to brain.

Æt. 31. Lived 10 days. Scalp wound over right parietal eminence; hæmorrhage from right ear followed by discharge, right facial paralysis, irritability, contraction of pupils. Temperature in left axilla at least two degrees lower than right, but no apparent paralysis; retention of urine. P.M.—Fracture extending from right sphenoidal fissure to squamo-parietal suture, then downwards to jugular foramen, passing across petrous bone. General bruising of left anterior portion of brain. Rupture of right kidney not opening into pelvis of the kidney; extravasation around.

Æt. 35. Lived 11 days. History of epilepsy. Struggling violently; hæmorrhage into right upper eyelid, hæmatoma above that, frequent convulsions for 24 hours, delirium tremens, facial paralysis, gradual loss of consciousness. P.M.—Fracture extending from right frontal protuberance backward to the sphenomaxillary fissure; contusion of right frontal and left occipital lobes.

Æt. 29. Lived 14 days. Only partially conscious, hæmorrhage from left ear; hæmatemesis; ecchymosis of mastoid process; internal strabismus of the left eye with slight dilatation of the pupil, slight facial paralysis, restlessness, erysipelas, pyæmia] (q. v.). P.M.—Fracture extending from middle of left parietal bone downwards along the ridge of petrous bone to sella tunica, other fractures leading from this comminuting the squamous bone; hæmorrhage between dura mater and skull; contusion and softening of right temporo-sphenoidal lobe; suppuration in right knee.

Female, æt. 63. Epileptic Almost unconscious; epistaxis, left pupil larger than the right; sub-conjunctival ecchymosis of right eye; coma. Lived 2 days, temp. 104·4° before death. P.M.—Fracture of squamous extending across squamo-sphenoidal suture, rupturing meningeal artery and causing extravasation between dura mater and the bone, fracture also of roof of orbit; bruising of left temporo-sphenoidal lobe.

INJURIES OF THE ABDOMEN, CHEST, SPINE, AND PELVIS.

Injuries of the abdomen.—Male 22, female 3. C. 19, D. 6. In 11 cases there were no symptoms beyond pain in the part injured, and in 4 some amount of shock. In the remaining 14 there was vomiting in 5 cases, shock 6, collapse 3, hæmaturia 5, peritonitis 2 (see also Fatal cases). *Complications.*—Fracture of radius 1, radius and ulna compound 1, ribs 1.

Fatal cases.—Males 3, females 2.

Male, æt. 25. Run over, lived two hours after admission, collapse. P.M.—Spleen extensively ruptured, great amount of blood in the peritoneal cavity, contusion of right auricle and inferior vena cava, and a small perforation at their junction posteriorly, blood in the pericardium, and some extravasation in the anterior mediastinum, behind a partial fracture of the sternum.

Male, æt. 20. Crushed between buffers of railway carriages. Severe pain, vomiting, collapse, died in a few hours. P.M.—Rupture of jejunum, and of right suprarenal capsule, extravasation round right kidney and in loose tissue of loins, acute peritonitis.

Male, æt. 8. Run over by a loaded van, great shock, thoracic respiration, severe abdominal pain, dulness on percussion in flanks, changing with position, great restlessness; fracture of radius and ulna, compound. Lived under 24 hours. P.M.—Rupture of liver in the fissure of the gall-bladder, hæmorrhage into peritoneum, fracture of 4th and 5th ribs on left side.

Female, æt. 7. Run over by a cab. Great abdominal pain and tenderness, much shock, frequent vomiting. Slight improvement followed by rapid breathing, dyspnœa, and retention of urine. P.M.—Rupture of bile duct, acute peritonitis. In this case there was also separation of epiphysis of right radius.

Female, æt. 49. Kicked by a man 4 days before admission; symptoms of peritonitis, distended abdomen with dulness in the flanks, varying with position of patient. Small amount of urine drawn off. Lived 2 days. P.M.—Rupture of bladder with urine free in peritoneum, acute peritonitis.

Male, æt. 25. Fall whilst wrestling two days before admission; fall was followed by severe pain in the abdomen; he had retention, and there was blood in the urine when drawn off. After admission increased pain, retention, blood in the urine, gradual distension of abdomen, vomiting, cystitis, swelling in hypogastrium, bladder filled with clot. Operation as for lateral lithotomy, partial relief. Incision above the pubes gave exit to gas and fœtid pus, constant irrigation, several sloughs came from abdominal wound; vomiting, emaciation; lived 36 days. P.M.—Rounded opening in bladder, near fundus, and rather anteriorly communicating with cavity behind pubes, which again opened externally through wound in the hypogastric region. Cavity limited above by greatly thickened peritoneum, local peritonitis, suppurative nephritis.

Wound.—Male, æt. 16. Admitted for extensive wound caused by the breaking of a grindstone, which was rapidly revolving, two hours before admission. Lived one day. P.M.—Bruising of intestines, acute peritonitis, hæmorrhage into mesentery.

Fracture of ribs.—Males 22, females 4. C. 17, R. 3, D. 6. Shock 5; hæmoptysis 4; cough 7; emphysema 4; emphysema and hæmoptysis 2; emphysema, hæmoptysis, and bronchitis 1; bronchitis 2; pneumonia 2; pleurisy 2. *Complications.*—Scalp wounds, with exposed bone, 1; wound of ear 1; contusion of hip 2; abdominal injury 2; exostosis of ear 1; contracted erysipelas (q. v.) 1.

Fatal cases.—Female, æt. 75. Knocked down by a cart; lost consciousness. Wound of right ear; fracture of right ribs from 2—9 inclusive, 4—6 in two places; erysipelas of face. Lived 9 days.

Male, æt. 71. Injury to chest causing fracture of ribs 4 days before admission,

when he was suffering from double pneumonia, from which he died 4 days later. P.M.—Fracture of 3rd—8th ribs on right, and 3rd on left side. Meningeal hæmorrhage and softening of spinal cord.

Male, æt. 37. Knocked down by L. and S.-W. engine; scalp wounds, with exposed bone; fracture of ribs; hæmoptysis and emphysema; great shock. Lived 2 days. P.M.—Fracture of ribs from 3rd—12th inclusive on the left side; pleurisy; pneumothorax; laceration and collapse of lung; laceration of spleen.

Male, æt. 40. Injured during a street fight. Fracture of ribs; emphysema; bronchitis; pneumothorax; venesection. Lived 10 days. P.M.—Fracture of 6th—9th ribs inclusive on right side; pneumothorax; collapse of lung; displacement of liver.

Male, æt. 78. Fall from a ladder 2 days before admission. Fracture of 5th—8th ribs on left side; hæmoptysis. Lived 13 days. P.M.—Double pleurisy; bronchitis; emphysema of lungs.

Male, æt. 40. Knocked down by a cab. Fracture of 7th—9th ribs inclusive on right side; shock; abdominal injury; pleurisy, for which he was twice tapped, developed. He died 46 days after admission. P.M.—Fracture of ribs; pleurisy; collapse of lung.

Fractures of the spine.—Males 4, female 1. C. 1, R. 1, D. 3.

C. Male, æt. 54. Injury in upper dorsal region; ? fracture; loss of power complete in legs, partial in arms; anæsthesia up to the level of the 5th rib; diaphragmatic breathing; retention of urine, followed by cystitis; rigor; gradual recovery.

R. Female, æt. 23. Fracture of coccyx, caused by falling downstairs.

Fatal.—Male, æt. 48. Fall downstairs. Lived 6 days. P.M.—Fracture of 7th cervical vertebra; cord uninjured; fracture of ribs on each side from 3rd—9th inclusive; emphysema; fatty degeneration of liver and spleen.

Male, æt. 55. Knocked down by a train. Lived 6 days. P.M.—Fracture of 7th, 8th, 9th, 10th dorsal spines, also of 1st cervical; acute cerebral meningitis; chronic interstitial nephritis; multiple exostoses. See also 'Trans. Path. Soc.,' 1884.

Male, æt. 31. Struck on the head by a crane. Fracture of 12th dorsal body; paraplegia; cystitis; scalp wounds; fracture of left tibia and fibula, compound comminuted; portions of bone removed. P.M.—Spinal cord opposite the injury softened and pulpy; dilated and hypertrophied bladder; pyelitis and suppuration along the ureters.

Fracture of pelvis.—Males 6, female 1. C. 5, D. 2.

C. Æt. 41. Fracture of right anterior superior spine, caused by fall.

Æt. 41. Fracture of right ilium, from fall of timber.

Æt. 22. Fracture of right ilium, injury from train; also wounds of scalp and thigh, the former exposing bone.

Æt. 46. Fracture of right side of pelvis; shock. Caused by fall.

Female, æt. 55. Fracture of ramus of ischium; rupture of varicose vein; retention of urine. Caused by fall of a house.

D. Male, æt. 3½. Fracture of pubes and ascending ramus of ischium, with contusion of perinæum; rupture of urethra and extravasation of urine; perinæal section. Lived 4 days.

Male, æt. 22. Comminuted fracture of right pelvic bone; rupture of urethra; extravasation of urine; suppurative inflammation of abdominal wall. Lived 7 days.

INJURIES OF THE UPPER EXTREMITIES.

Wounds.—Males 16, females 9. C. 21, R. 4. Axilla 1; arm 5; forearm 10; hand 9; of the right side 18, left 7; lacerated 15; incised 1; contused and lacerated 1; punctured 4; poisoned 1; gunshot 3; division of tendons 7; wound of median nerve 2 (1 readmission); removal of foreign body 3; followed by lymphangitis 1. Wound of artery, of right forearm 8, left 4; wound of radial artery 7, ulnar 2, both 3; also of ulnar nerve 1; of tendons 2; lacerated 9; incised 3.

Dislocations—

Humerus.—C. 3. Males 2, females 1. All subcoracoid of the left side caused by a fall on the shoulder, reduced by manipulation. *Complications.*—Fracture of clavicle 1, contusion of hand and face and bronchitis 1.

Forearm.—Males 3. C. 3. Left 2; 1 compound under treatment elsewhere for 3 weeks; 1 simple under treatment elsewhere for 5 weeks, stiffness of joint, non-reduction of dislocation, right, displaced outwards, complicated by fracture of the humerus and radius.

Thumb.—C. 1, R. 2 (readmission). Right side 3; in 1 case amputation, in 2 unsuccessful attempt to reduce.

Fracture of humerus.—Males 12. C. 7, R. 5.

Simple.—4. All of the left side. Of the shaft 2; internal condyle 1; separation of epiphysis 1; shock 1; fracture of radius and ulna 1.

Comminuted.—4. 3 left, 1 right. Middle of shaft 2; upper end 1; lower end 1.

Compound.—4. 3 left, 1 right. Of shaft 1; separation of epiphysis 1; of internal condyle 1; into elbow-joint requiring amputation 1.

INJURIES OF THE LOWER EXTREMITIES.

Dislocations—

Hip.—Male, æt. 10. Was struck by a truck on the railway whilst kneeling, severe lacerated wound of the left leg and a dorsal dislocation of the right hip, reduced by manipulation; it slipped out of position twice afterwards whilst the patient was in bed.

Foot.—Male, æt. 42. Injury to ankle, followed by sloughing of the skin 5 months before. End of internal malleolus projecting covered with granulation tissue, under this an opening into the ankle joint, foot displaced outwards, plane of foot normal.

Fractures of femur.—67. Males 45, females 22. C. 64, R. 1, D. 2.

Simple.—Males 42, females 19. C. 58, R. 1, D. 2. Of these 32 were of the

right and 29 of the left femur, whilst 19 were caused by direct, 40 by indirect violence, and 2 by muscular action. There were 14 oblique fractures, the remainder were apparently transverse; separation of lower epiphysis in 2; ununited in patient, æt. 32, admitted 15 weeks after injury, operation followed by erysipelas, hæmorrhage from wound, and amputation. Refracture after an interval of 10 weeks 1, refracture for bad position 1. Of the 2 cases in which the fracture was produced by muscular action, female, æt. 45, tumour of the bone and multiple malignant growths. Male, æt. 37; union was delayed, this patient was twice readmitted in 1884 for fracture of tibia and fibula, and union was then long delayed. Spinal disease and diarrhœa 1. Other injuries: Fracture of patella on the other side and synovitis of the knee 1; synovitis of the knee 2; fracture of humerus, simple 1; compound 1; scalp wounds 2. *Complications.*—Retention of urine 2; erysipelas 1 (see also Fatal cases). In female, æt. 15, suffering from compound comminuted fracture of right femur, there was also a simple comminuted fracture of the left. Fracture of left femur also occurred to a case under treatment for bone disease.

Fatal cases.—Female, æt. 28. Transverse fracture of right femur caused by indirect violence, lived 45 days. P.M.—Chronic cystitis, suppurative nephritis, large bedsore.

Male, æt. 64. Fell downstairs and through a glass door whilst delirious; transverse fracture on right side; scalp wounds, wound of hip, retention of urine, violent delirium; lived 5 days. P.M.—Pneumonia of lower lobe of right, œdema and emphysema of left lung.

Compound.—Male, æt. 48, platelayer. Knocked down by engine, fracture of left femur, bone projecting; scalp wounds, fracture of ribs, amputation of thigh; cured.

Compound comminuted.—Male, æt. 21. Run over; comminuted fracture into knee-joint, amputation of thigh. Female, æt. 15. Fell from window; much comminution of lower one third of left femur, small wound, fracture extended into joint; fracture at junction of right epiphysis with slight separation of the condyles and comminution of the outer one; incomplete fracture of inferior maxilla; shock. Result: no difference in length of limbs, and movement good.

Neck of femur.—Male, æt. 28. Extra-capsular impacted, right. Females, æt. 66 and 72. Impacted intra-capsular on right side.

Fractures of patella.—Males 14, females 5. C. 17, R. 1, D. 1. Right 13, left 6; caused by muscular action 14; direct injury 4; cause doubtful 1; ununited fracture, bone sutured 1; refraction after 8 weeks 1; starred fracture 1. *Complications.*—Wound of eye, with prolapse of iris 1; ulceration of leg 1. There was also a fracture of left patella in a case of fracture of right femur.

Fatal case.—Male, æt. 56. Transverse fracture of right patella due to muscular action. Admitted 2 days after accident. Atony of bladder and retention; perinæal puncture. Lived 39 days. P.M.—Cystitis; pyelitis; acute peritonitis due to giving way of posterior wall of bladder.

Fractures of tibia.—33.

Simple.—Males 22, females 8. C. 19, R. 11. 17 of the right and 13 of the left; 14 due to direct, 14 to indirect violence; 2 exact mode of injury not

known; transverse fractures 25, oblique 5; severe contusion of leg 3; 1 contracted erysipelas.

Compound.—3. Males 2, female 1. C. 3. Male, æt. 56. Double fracture, the lower being compound; had two attacks of transient hemiplegia of the right side, with aphasia. All treated by antiseptic dressing and splints.

Fractures of fibula.—35. Males 30, females 5. C. 20, R. 15. Of these 6 accompanied by rupture of internal lateral ligament of the ankle-joint; 24 fracture of the right, and 4 of the left fibula; 25 due to indirect, and 7 to direct violence. *Complications.*—Effusion into ankle-joint 2; delerium tremens 1.

Fractures of tibia and fibula.—86. Males 68, females 18. C. 70, R. 14, D. 2.

Simple.—Males 57, females 14. C. 56, R. 14, D. 1. Of the right tibia and fibula 41, of the left 30; of these 44 were caused by indirect, 26 by direct violence; 1 cause doubtful; 1 ununited; 1 case of delayed union; tibia comminuted in 8; fracture extended into the ankle-joint 1; into knee-joint 1; unusual displacement of foot 1; much contusion at point of fracture 12. Other injuries: wound of chin 1, of leg 2; compound dislocation of thumb 1. *Complications.*—Abscess of leg 1; delirium tremens 3; locomotor ataxy and ulcer of foot 1; mitral disease 1; albuminuria 1. There was also a comminuted fracture of the left leg in a case with compound comminuted of right.

Fatal case.—Male, æt. 64. Comminuted fracture of right leg, by direct violence; delirium tremens. Lived 13 days. No P.M.

Compound.—Males 9, females 4. Of right leg 8, left 5; caused by indirect violence 5, direct 8. Antiseptic treatment. In 2 bone was removed; 1 amputation performed (see Fatal case); 1 followed by necrosis; contusion of foot 1; erysipelas 1; ischio-rectal abscess 1.

Female, æt. 12. Fragilitas ossium, having previously suffered from five fractures of various bones.

Fatal case.—Female, æt. 44. Fell from a window (? 50 ft.). Compound of right leg, fracture of pelvis, and compound of right ulna; much shock; amputation of right leg, and removal of fragments from ulna; vomiting and restlessness. P.M.—Comminuted fracture of horizontal ramus of pubis on right side; head of femur on right side driven through right acetabulum.

Compound comminuted.—Males. C. 2. Both of the right leg, and due to direct violence. Amputation 1; this patient had also comminuted fracture of other leg (see Simple fractures). There was also a fracture of the left leg, requiring removal of bone, in a fatal case of spinal fracture.

Special Table I.—*Hernia.*

Inguinal.

No.	Occupation.	Sex.	Age.	Duration of hernia.	Duration of strangulation.	Treatment.	Structure of hernia.	Result.	Remarks.
1	Labourer	M.	28	Congenital	—	Truss	?	R.	Conjoined with hydrocele (?),
2	Infant	M.	3 wks.	„	—	Ice	?	R.	Constipation.
3	Child	M.	4	„	—	General	?	R.	Weakly ill-fed child.
4	Labourer	M.	39	20 years	—	Rest	?	R.	Came for radical cure, but suffering winter cough.
5	Infant	M.	19 mos.	Congenital	3 hours	Warm bath; taxis	?	R.	No symptoms.
6	Carpenter	M.	27	6 years	—	Rest	Enterocele	R.	Hernia down for twenty-four hours.
7	Single	F.	29	3 days	—	Ice	„	R.	Hernia down for most of the time.
8	Married	F.	24	5 years	24 hours	Chloroform; taxis	„	R.	Hernia came down and produced symptoms of strangulation during the first stage of parturition.
9	Orange Porter	M.	24	4 hours	4 hours	Ice	„	C.	
10	Furniture Porter	M.	31	2 hours	2 hours	Ice; taxis	„	C.	
11	Railway Porter	M.	22	6 hours	6 hours	Ice	„	C.	
12	Labourer	M.	44	13—14 years	24 hours	„	„	C.	Also hernia on left side for five years.
13	Stoker	M.	32	24 years	3 hours	Warm bath	„	C.	Taxis when pat. anæsthetised; unsuccessful.
14	Signalman	M.	25	7 years	12 hours	Warm bath; subcutaneous inject. morphia; ice; taxis	Entero-epiplocele	C.	

SPECIAL TABLE I.—*Hernia* (*continued*).

No.	Occupation.	Sex.	Age.	Duration of hernia.	Duration of strangulation.	Treatment.	Structure of hernia.	Result.	Remarks.
15	Labourer	M.	27	8 years	4 hours	Morphia; ice	Enterocele	C.	
16	Nil	M.	74	30 years	3 days	Ice	?	C.	
17	Baker	M.	22	5 years	24 hours	„	?	C.	
18	Machinist	M.	18	6 hours	6 hours	„	?	C.	
19	Clerk	M.	43	20 years	5 days	„	?	C.	Strangulation incomplete.
20	Coachman	M.	33	24 hours	24 hours	„	Entero-epiplocele	C.	Taxis unsuccessful.
21	Van Driver	M.	36	7 years	6 hours	„	„	C.	
22	Nil	M.	69	2 years	2 days	Warm fomentations and morphia	Enterocele	C.	
23	Labourer	M.	35	12 years	12 hours	Ice	?	C.	Retention of urine.
24	„	M.	42	Congenital	8½ hours	Extra-peritoneal operation	?	C.	
25	Cab Driver	M.	56	20 years	12 hours	Sac opened	Entero-epiplocele	C.	The edges of the ring were sutured with silk. The suture came away fifty-two days after operation, having caused suppuration in wound.
26	Engineer	M.	19	5 years	7 hours	„	„	C.	Really congenital. Sac removed. Pillars of ring brought together with catgut. Some omentum removed.
27	Foundryman	M.	26	8 years	19 hours	„	„	C.	Neck of sac dissected out and removed. Canal obliterated by means of two stout catgut ligatures. Omentum removed.
28	Child	M.	3	Congenital	24 hours	„	„	C.	Omentum removed. Sac removed after spermatic cord had been dissected out from its anterior border. No tendency to hernia a year later.

29	Painter	M.	28	„	„	„	„	C.	Some omentum and about an inch of the sac removed. When seen a year later no tendency to protrusion.
30	Sign Writer	M.	54	8 years	„	„	Enterocele	C.	Sac partly removed. Had an abscess over scapula later.
31	Baker	M.	42	20 years	3 days	„	Epiplocele	C.	Sac partly removed, also some omentum.
32	Watchman	M.	46	Congenital	2 days	„	Enterocele	D.	Shock of operation. Congestion of lungs. Multiple cyst of left kidney. Temp. 106·2° before death.
33	Tea Broker	M.	54	? years	6 hours	„	Entero-epiplocele	D.	Lived six days. Congestion of lungs with scattered patches of broncho-pneumonia.
34	Child	M.	2	Congenital	3 weeks	Incision	Epiplocele	C.	Suppuration in sac.

Femoral.

35	Married	F.	41	3—4 years	—	Ice bag	—	R.	Irreducible for four months.
36	Saddler	M.	59	6 years	4 days	Ice; taxis	—	C.	
37	Cook	F.	42	12 months	1 day	Extra-peritoneal operation	—	C.	After reduction of hernia the sac was ligatured at its neck and removed.
38	Married	F.	58	3 years	4 days	Sac opened	Entero-epiplocele	C.	Portion of omentum removed.
39	„	F.	23	12 months	5 hours	—	Enterocele	C.	Sac removed.
40	„	F.	69	10 years	3 days	—	Entero-epiplocele	C.	Some dark omentum removed. Peritoneal fluid.
41	„	F.	47	20 years	„	—	—	C.	Some omentum removed. Contents adherent to interior of the sac and irreducible.
42	„	F.	37	5 years	1 day	—	Epiplocele	C.	Some omentum removed.
43	„	F.	40	2 months	6 days	—	Entero-epiplocele	R.	Some omentum removed. The subject of ventral hernia. Transferred to medical ward suffering from pneumonia. Ultimately died of phthisis.
44	Widow	F.	74	30 years	12 hours	—	„	C.	Some omentum removed. Complicated by cystitis.
45	Married	F.	40	21 years	2 days	—	Enterocele	C.	Sac removed.
46	„ (washing)	F.	42	3 years	2 days	—	Entero-epiplocele	C.	Omentum removed.
47	Married	F.	27	2 years	36 hours	—	Enterocele	C.	Sac removed.

Special Table I.—*Hernia (continued).*

No.	Occupation.	Sex.	Age.	Duration of hernia.	Duration of strangulation.	Treatment.	Structure of hernia.	Result.	Remarks.
48	Widow, cook	F.	46	5 years	? 14 days	—	Entero-epiplocele	D.	Omentum removed. Died from collapse day after operation. General peritonitis. Small intestine two feet above ileo-cæcal valve, partly gangrenous.
49	Married	F.	75	9 years	36 hours	—	Enterocele	D.	Lived five days after operation. Had suffered from ? bronchitis for fourteen days. P.M.—Left pleuro-pneumonia; granular kidneys. Seat of strangulation eighteen inches above ileo-cæcal valve.
50	„	F.	39	7 days	7 days	—	—	D.	Lived six days. Gut gangrenous at time of operation; left *in situ*. Small intestine twelve inches from valve. Peritonitis.
51	„	F.	40	3 years	4 days	—	—	D.	Lived fourteen days. P.M.—Perforation of bowel at edge of stricture; acute peritonitis; early granular kidneys.
52	Gardener	M.	50	7 years	24 hours	Sac opened	Entero-epiplocele	D.	Lived thirty-three days after operation. Sac removed. The subject of left inguinal hernia and stricture of urethra. P.M.—Gangrenous inflammation. Acute peritonitis.
						Umbilical.			
53	Married	F.	50	7 years	3 days	Ice	Entero-epiplocele	C.	
54	Carman	M.	42	18 months	—	Rest	?	R.	Irreducible for two months. Hepatic disease.
55	Married	F.	54	27 years	—	W. W. D.	? Epiplocele	R.	Irreducible. Ulcer of skin over it.
56	Cellarman	M.	36	2 years	5 hours	Sac opened	Entero-epiplocele	D.	Died from collapse.
57	Butcher	M.	61	2 months	24 hours	„	Epiplocele	D.	Lived two days. P.M.—Peritonitis, emphysema, and dilated right heart.

58	Broker	M.	65	? years	24 hours	„	Entero-epiplocele	D.	Peritonitis. Bronchitis. No P.M.
59	Provision Merchant	M.	63	—	—	„	„	D.	Died next day; collapse. Liver fatty and cirrhosed. Early interstitial nephritis. Very fat man.
60	Married	F.	52	—	—	„	„	D.	Very fat woman. Died day of operation. P.M.—Acute peritonitis; gall-stones.
						Ventral.			
61	Tailor	M.	50	7 days	24 hours	Extra-peritoneal	Epiplocele	C.	Sac obliterated by catgut sutures.
						Rupture of Hernial Sac.			
62	Married	F.	46	20 years	—	Replacing of gut; removal of sac	Enterocele	C.	Rupture of right femoral hernia by sneezing. Had undergone operation two years before for strangulated hernia. Rupture did not occur through the scar (see 'Transactions of Medical Society').

SPECIAL TABLE II.—PYÆMIA.

(Admitted with the disease.)

Male, æt. 57. Wine cooper. Five weeks before admission the patient injured his left forefinger, a week later an abscess required incision, and on admission there was necrosis of the terminal phalanx. Three weeks before admission he complained of severe pain in left thigh; this became swollen and tender. On admission, in addition to the necrosis of phalanx, well-defined inflammatory induration of the left thigh without fluctuation; also a smaller swelling on right thigh. Patient sallow and anæmic. Incision made into left thigh gave exit to a small quantity of pus; 4 days later necrosed phalanx was removed; 2 days later an abscess in left buttock was opened, and an incision in right thigh released a good deal of pus. For some time there was considerable discharge from these incisions, and the patient emaciated greatly; the discharge was offensive, and he had a temperature more hectic than pyæmic in character. A large bedsore formed over the sacrum, and he had a troublesome cough. On the 30th day after admission he began to improve, and left the hospital cured 126 days after admission. No rigors.

Female, æt. 37. Married. Was confined 3 months before admission, and a fortnight later an abscess broke in calf of left leg. After that she had rigors, and an abscess formed behind the left ear; this was opened. For a week an abscess which was incised on admission had been forming over the left adductor muscles; she had also pain and stiffness in left wrist, but no swelling; slight albuminuria. Three days later slight shivering, swelling of the wrist, formation of another abscess below the adductor region, and also over external malleolus. 23rd day.—Rigor and increased swelling in the left thigh. 35th day.—Vomiting followed by erysipelatous eruption on left leg; urine became scanty, smoky in colour, and contained as much as one third albumen; diarrhœa with dry thickly coated tongue; spread of erysipelas to toes; sloughing of skin and cellular tissue round left foot: incisions; some evidence of ascites; delirium. The erysipelas lasted 28 days. The urine improved, only a trace of albumen remained, and a gradual improvement in general condition followed. An abscess was afterwards incised over the inner malleolus; a swelling formed in right breast, but did not require incision. The left wrist was often moved under anæsthetic, but was stiff and comparatively useless when she left hospital 195 days after admission. Cured.

The temperature, which was irregular for some days after admission, varying from 98·6° to 103·4°, became more regular, an evening rise of from one to two degress having become established until a rigor 22 days after admission; it then rose to 104°, and was very irregular, 96·4° to 105°. When the erysipelas

disappeared it became normal until the appearance of the abscess 139 days after admission over inner ankle, when it rose to 101·8°, becoming normal again after this was opened.

Female, æt. 9 months. Five days before admission an abscess was noticed on the back of the right hand; others then appeared on the back of the left hand, in right axilla, and over the left hip, with swelling of the leg; in addition to these abscesses there was general bronchitis and great restlessness, with want of sleep; sweating of the head. Temperature very irregular, varied from 104·2° to 99·2° just before death. Lived 4 days. P.M.—The abscesses which had not been opened communicated neither with the bones nor with the joints. Recent general pleurisy on right side, and in the lower lobe a recent abscess not extending to the surface. Some recent bronchitis.

Male, æt. 6½. The child's mother first noticed swelling of the left foot a fortnight before, and the skin had given 2 days before admission after poulticing; he had also had a cough for 2 days and feverishness. On admission a large ulcer on outer side of left ankle, exposing the tendons and external saphena vein, a smaller one on inner side of ankle. Pain, fulness, and tenderness in right groin and around the hip-joint. Respiration short and catchy; pulse rapid, 140; temp. 104·2°; tongue dry and brown; motions unformed, yellow; delirious. After admission there was no marked change, the temperature did not exceed 100·8°, and the local symptoms were not more marked. He died suddenly 2 days after admission. P.M.—Abscess behind the right hip, not connected with joint; left calcaneo-cuboid joint open and disorganised. On opening the pericardium the heart was found to be surrounded by about 5 oz. of dark soft clot. Both layers of the pericardium are found to be coated with thick and very irregular lymph, rupture of the wall of the left ventricle, the opening being partly plugged with clot; this opening was placed posteriorly near the junction of auricle with ventricle. Small abscess under the parietal pleura on left side corresponding to lower lobe. Numerous small abscesses in the cortex of both kidneys.

Female, æt. 11. Was sent into the hospital as a case of rheumatic fever, which was stated to have commenced a month before. The left thigh was flexed and rotated outwards, lying on its outer side; the limb was greatly swollen and œdematous, any movement causing pain; there was a large abscess of the left thigh, occupying lower two third, and extending round to the back, and when this was incised the femur was quite denuded of periosteum. On the right side the iliac fossa was occupied by a large inflammatory swelling which extended to inner side of thigh; incision into this swelling evacuated a large quantity of pus. On this side the femur was not stripped of periosteum, but the muscles were separated from the lesser trochanter. Antiseptic dressing was employed. The child was weak and feeble; delirious; very restless. After the incision of the abscess she became collapsed, and died 4 days after admission. The temperature varied from 97° to 101° whilst under observation.

P.M.—Acute necrosis of head of left femur, which was found lying loose in the joint and surrounded by a large abscess, necrosis of shaft of left femur, with several outgrowths of new bone. Large abscess in right psoas muscle; pus in left sterno-clavicular joint; severe purulent pericarditis and myocarditis; left pleurisy; abscess in kidney.

CASES IN WHICH THE DISEASE AROSE IN THE HOSPITAL.

Male, æt. 54. Admitted with scirrhus growth in rectum, which had been causing symptoms for 5 months. He was admitted March 30th. On April 7th the temperature was high without apparent cause, 103° to 103·6°.

8th.—Temp. 101° to 103·4°.

9th.—103·4° to 104°.

10th.—102·4° to 104·6°. This day there was pain in both thighs extending down to knees, and keeping him awake at night; he had also some diarrhœa.

11th.—Temp. 103·6° to 101·6°.

12th.—Temp. 101° to 102·4°. Complaining of pain in his joints, ankles, knees, elbows; swelling of ankles and left elbow; redness and œdema of left ankle, and over left calf; some chilliness in the morning.

13th.—The patient had a rigor for the first time, temperature going up to 105·6°, followed by profuse sweating. Was delirious all night, and is unable to answer questions this morning. More swelling of left ankle.

14th.—Has had diarrhœa for two days. Died.

P.M.—Malignant disease (scirrhus) of rectum and prostate, abscess outside right knee-joint; cellulitis of right arm and tissues external to left ankle. Liver fatty; other organs fairly healthy; no infarcts.

Male, æt. 27. Agricultural labourer. Admitted November 24th, 1882, with disease of the right knee of 8 months' duration, which developed without known cause. A sinus formed January 30th. An incision was made enlarging this February 6th, the temperature, which had been hectic in character, reaching as high as 104·2° in the evening after the formation of the sinus. The patient was emaciating, and there was increased suppuration in the joint; he also had much sweating. On the morning of the 10th temperature rose to 105·8°, and amputation of the lower one third of thigh was performed, the stump being dressed under the spray of carbolic solution; disease apparently tubercular.

12th.—Carboluria; iodoform substituted for carbolic-acid dressings; complaining of pain in left knee, which was swollen.

13th.—Urine clear; discharge from wound slight; a little delirious at night.

14th.—Complaining of pain and tenderness in left wrist.

17th.—The temperature, which was normal 6 hours after operation, was not lower than 101·2° until the 16th, when it fell to 95°, having been 105·2° earlier in the day; pulse 130; sweats profusely; no rigor; stump dry; discharge offensive; union along the edge of flaps. Gradually passed into a sort of typhoid condition, dying on the 19th, temperature since 17th having varied from 99·8° to 105°. Was in hospital 87 days.

P.M.—Considerable suppuration between flaps; pus in the left wrist, left knee. Advanced caries of all the dorsal vertebræ, with a large abscess in front extending chiefly towards the left side. Abscess at base of left lung; minute grey tubercles scattered throughout each lung; old pleuritic adhesions.

Male, æt. 38. A porter. Admitted October 4th with right popliteal aneurism

of large size, some vascular excitement, and extensive cardiac disease. The aneurism had been noticed 2½ months. In the evening digital compression of the femoral artery was commenced, and after 7¾ hours' compression pulsation ceased in the aneurism. This was followed by loss of sensation in the limb and gangrene, for which the thigh was amputated October 9th. On the following evening temperature rose to 101·4°, but did not exceed 99·6° nor fell below 97·4° until the morning of October 15th, when there was a slight rigor, followed 2 hours later by a more severe rigor; the temperature rose to 103·4° during second rigor, and to 105·4° 8 hours later.

16th.—Another severe rigor; temp. 104°; pulse 120; great restlessness and thirst.

17th.—Another rigor; temp. 107·4°; delirious.

18th.—Intense thirst; high temperature maintained all day; pain in both arms.

19th.—Swelling and redness along flexor tendons of left wrist; tenderness in joints of both arms; wandering in the morning; violently delirious later; evacuations passed into bed; unconsciousness. Died early on morning of October 20th, 16 days after admission. No P.M.

Female, æt. 42. Married. Admitted for scirrhus of the left breast, which was amputated January 27th, the day after admission, with antiseptic precautions. The temperature on the following evening was 101°.

30th.—Wound redressed antiseptically; temp. 99·2° to 103·2°.

31st.—Temp. 102·2° to 100·4°.

February 1st.—Temp. 101° to 101·8°.

2nd.—99·6° to 101·6°; wound redressed.

3rd.—101·2° to 99·8°.

4th.—100·8° to 102°; wound redressed; stitches removed.

5th.—101·4° to 100·4°.

6th.—Complaining of sore throat, ? follicular tonsillitis, also of catching pain in left side; no albuminuria; temp. 101·4°; p.m. 102·8°.

7th.—Examination of chest showed effusion in left pleura; antiseptics were discontinued, and a poultice was applied. The respiration was hurried, and the dyspnœa became extreme, patient becoming quite livid, and temp. 103·2°; delirium; increasing dyspnœa. Died 10.30 p.m., 11 days after operation. P.M.—About 40 oz. of turbid fluid in left pleura; carnification of left lower lobe; two small recent abscesses in lower lobe. Other organs healthy.

Male, æt. 5½. Admitted August 31st with a large fibrolipoma of back, which had been growing for 5 years, since an operation for removal of a similar tumour when 6 months old. This tumour was removed with antiseptic precautions on September 15th. There was free hæmorrhage; he passed a bad night, restless, and sleeping little. Next day temp. a.m. 101°, p.m. 102·6°.

17th.—Slightly delirious; some diarrhœa; the urine which was passed in the early morning was quite black, so the dressing was changed for eucalyptus; patient hardly conscious; temp. a.m. 102·4°, pulse 160; p.m. 102·6°.

18th.—More conscious, but still restless; urine dark; temp. 101° to 103°.

19th.—Continuous delirium, but this is less noisy; urine clear; vomited once yesterday; temp. 103° to 103·6°.

20th.—Swelling over right knee; effusion into joint; temp. 103·8° to 103°.

21st.—Slough of innermost corner of a flap, swelling over left knee; temp. a.m. 103° to 103·8°.

22nd.—The wound is looking very dry and sloughy; no discharge from it excepting a small quantity of thin yellow pus; it is dressed with boracic acid lotion. The child is worse; his mental condition is not improved; lies dozing for a few minutes, then waking up, calls out loudly; pulse 138, resp. 44, not hurried; no cough. Over the outer side of each knee there is cutaneous redness, and effusion into each joint, more especially the left. Abdomen hard and distended, but without tenderness; tongue dry and glazed; no vomiting or diarrhœa; some thirst and loss of appetite; temp. 102·6° to 103·4°.

23rd.—Temp. 103·6° to 102·6°.

24th.—Much sweating; no rigors; increased discharge from the wound; slough under the right arm and elbow; discharge from right ear; temp. 102·4° to 103·8°.

25th.—General condition much worse; weak, very pale, and emaciated; some difficulty in swallowing; pulse rapid and weak; very restless; sweats a great deal. Much swelling of the elbows and of left knee, also over the occiput. Sloughing of right ear; the flaps made for removal of tumour have sloughed, and there is a raw surface from shoulder to shoulder; temp. 102·8° to 103°.

26th.—Died 7.30; temp. 105·2°; quite unconscious.

P.M.—Pus in left knee-joint; abscess over front of right thigh and dorsum of right forearm; large ragged wound across the back, presenting very little granulation tissue, laying bare the erector spinæ and posterior edge of scapula. About one inch of rib quite bare and denuded of periosteum. Spleen somewhat enlarged; no internal deposits.

Female, æt. 45. S. Admitted with chronic inflammatory induration, with sinuses of 2 to 3 months' duration affecting the right breast, which was amputated 9 days after admission. The day after the operation her pulse was 112, and temperature both morning and evening 101°. Until the 20th there was a difference of from 1° to 2° between morning and evening, not exceeding 100·6° p.m. On the 20th the wound was redressed for the third time under the spray, and all the sutures removed. After this, until the evening of the 23rd, when it rose to 103·4°, the temperature was normal; the drainage-tube was removed, a small piece being placed in each angle of the wound. In the afternoon there was some shivering, but no actual rigor.

25th.—Rigor lasting nearly 2 hours; temp. at noon 104·6°, pulse 136, resp. 36.

26th.—Temp. last evening 102·6°, this morning 98·4°; wound redressed; lotio sodæ chlor. substituted for the antiseptic dressing, there being a well-marked erysipelatous eruption on the chest around the wound. Evening temp. 102·4°.

27th.—Temp. 100° to 100·2°.

28th.—Shivering in the afternoon; the erysipelatous eruption has spread to the other breast, but not upwards or downwards; temp. p.m. 104·6°.

29th.—Two rigors during the afternoon; temp. 105·2°.

30th.—Another rigor in the evening; temp. 105°; complaining of pain in the right knee.

December 2nd.—Rash fading; temp. 101° to 103·6° during last 2 days, pulse

140, resp. 20; marked effusion in right knee; occasional vomiting; wanders in her sleep.

4th.—Wanders a good deal; face yellow, much sunken; pulse small, not to be counted; subsultus tendinum; some shivering; evening temp. 104°, pulse 130; passes motions and urine involuntarily; about 1½ oz. of thin pus drawn off from the right knee.

5th.—In a semiconscious condition, dozing most of the day; pulse 160, hardly perceptible; takes nourishment; no vomiting; temp. a.m. 101°, p.m. 103·6°.

The patient died on the 8th, the recorded temperature during the last 3 days having been from 102·2° to 103·8°.

P.M.—About 1 drachm of pus in each knee-joint; spleen enlarged and soft; some purulent endometritis; other organs comparatively healthy.

Male, æt. 29. Chemist. Admitted July 22nd, after a fall, completely unconscious, with a slight scalp wound; hæmorrhage from the left ear, and vomiting, there being blood in the vomit.

23rd.—Ecchymosis of left mastoid process; convergent strabismus of left eye, the pupil of which is larger than the other.

25th.—Some blood-stained discharge from the left ear.

26th.—? Slight facial paralysis on the left side.

30th.—There had been no rise of temp. above 99·6° until this date, when it was a.m. 100°, p.m. 103·6°, pulse 80.

31st.—Less restless than he had been; some enlarged and tender glands on the left side of the neck; vomiting in the morning, and a red elevated erysipelatous eruption spreading from scalp, which is œdematous towards eyebrows; temperature irregular, 102·6° to 104·6°.

August 1st.—Temp. 102·4° to 105°.

2nd.—Has vomited once; lead lotion applied to eruption, which is still spreading; temp. 101·6° to 104·6°.

3rd.—The right knee painful, hot, tender, and swollen; temp. 100·4° to 103·6°.

4th.—The eruption, which had faded somewhat behind, is spreading down the face; paralysis of left side of face more marked; redness and pain in left forefinger and in right elbow; temp. 101° to 105·2°.

5th.—Patient died in the evening, the temperature before death being 105·6°; no rigors.

P.M.—Fracture of base of skull (q. v.); hæmorrhage between dura mater and skull; injury to right tempero-sphenoidal lobe; suppuration in right knee.

Special Table III.—*Erysipelas.*

No. of case.	Sex.	Age.	Disease for which admitted.	Ward in which erysipelas arose.	Duration of residence before attack developed in hospital.	Probable cause of attack.	Part where eruption appeared.	Duration of time between action of probable cause and appearance of eruption.	Duration of attack.	Result.	Remarks.
1	F.	41	Scirrhus of axillary glands	Alexandra	33 days	Removal of breast and growth	Wound	17 days	3 wks.	C.	
2	F.	57	Scirrhus of breast & glands	„	14 „	Removal	„	5 „	2 days	D.	General secondary growths.
3	F.	47	Scirrhus of breast recurrent	Elizabeth	17 „	„	„	12 „	5 „	C.	Some mucus in urine.
4	M.	70	Epithelioma of tongue and glands	Leopold	8 „	„	„	3 „	7 „	D.	Division of cheek and jaw.
5	M.	74	Epithelioma of lip and glands	„	31 „	„	„	18 „	13 „	C.	
6	F.	84	Epithelioma of cheek	Alexandra	4 „	„	„	2 „	12 „	C.	
7	F.	28	Sarcoma of breasts	„	31 „	„	„	30 „	2 „	D.	General secondary growths; pyelitis.
8	F.	45	Chronic inflammatory induration of breast	„	21 „	„	„	12 „	13 „	D.	Pyæmia (q. v.).
9	F.	52	Sarcoma of inferior maxilla	„	19 „	Secondary hæmorrhage 13 days after operation	„	1 „	8 „	D.	Actual cautery used for the hæmorrhage, which was profuse from ext. carotid.
10	F.	33	Lipoma of back	„	6 „	Removal	„	36 „	23 „	C.	
11	F.	75	Lipoma of thigh	Elizabeth	22 „	„	„	18 „	19 „	C.	Died 12 days later from exhaustion.
12	F.	34	Adenoma of breast	„	43 „	—	„	36 „	5 „	C.	
13	F.	22	Submaxillary cyst	Alexandra	22 „	—	„	7 „	6 „	C.	Tracheotomy done at same time as operation.
14	M.	11	Lupus of face	Leopold	21 „	Scraping	„	2 „	8 „	C.	
15	F.	18	Erysipelas of face	Erysipelas Ward	16 „	? Cold		?	3 „	C.	Subject to the disease.
16	M.	36	Erysipelas of head	„	17 „	?	Scalp	?	7 „	C.	

17	F.	5	Erysipelas of groin	„	27 „	Removal of drainage tube from incision	Wound	10 „	6 „	C.	Incision required for abscess during first attack.
18	M.	26	Erysipelas of leg	„	6 „	? Exposure	Knee	?	5 „	C.	No wound. One previous attack after partial excision of patella.
			(2nd attack)	„	16 „	„	Face	?	12 „	C.	
19	M.	35	Erysipelas of leg	„	13 „	„	Ulcer	?	14 „		Large granulating wound.
20	M.	44	„	„	17 „	„	Incisions	?	12 „	C.	Heavy drinker.
21	M.	65	„	„	5 „	„	„	4 „	12 „	D.	
22	F.	18 mos.	Axillary abscess	Victoria	3 „	Incision for abscess	„	3 „	12 „	C.	
23	F.	16	„	Elizabeth	10 „	Incisions	Arm	9 „	11 „	C.	
24	M.	22	Varicose veins of leg	Albert	19 „	Operation, excision	Wound	6 „	16 „	C.	Potman.
25	M.	41	Retention of urine, stricture, cystitis	„	60 „	Perinæal incisions	„	4 „	16 „	C.	Perineal section twice during residence; rigors during treatment by catheterism.
26	M.	46	Urinary fistula	„	30 „	? Catheterism; ? exam. of abscess	Fistula	2 „	8 „	C.	Albuminuria; rigors during treatment.
			(2nd attack)	Erysipelas Ward	39 „	Exposure to cold	Hip	24 hrs.	9 „	C.	
27	F.	11	Necrosis of tibia	Alexandra	10 „	Sequestrotomy	Wound	2 days	4 „	C.	
28	M.	52	„	Leopold	178 „	„	„	?71 „	4 „	C.	No albuminuria; disease for 6 years.
29	F.	11	„	Elizabeth	15 „	„	„	2 „	5 „	C.	
30	F.	22	Necrosis of fibula	Alexandra	159 „	„	„	3 „	5 „	C.	
31	M.	54	Ostitis of tibia	Albert	60 „	Trephining	„	5 „	14 „	C.	
32	F.	15	Necrosis of femur	Alexandra	125 „	Incision	„	1 „	9 „	C.	
			(2nd attack)	Erysipelas Ward	146 „	Exposure	„	?	4 „	C.	
33	F.	57	Caries of mastoid cells; diabetes	Alexandra	10 „	Incision	„	7 „	9 „	D.	The incision was made into abscess over the mastoid process.
34	M.	7	Caries of tibiæ	Leopold	8 „	Operation	Legs	2 „	28 „	D.	Several rigors with high temp. during last few days. No evidence of pyæmia. No P.M.

SPECIAL TABLE III.—*Erysipelas* (*continued*).

No. of case.	Sex.	Age.	Disease for which admitted.	Ward in which erysipelas arose.	Duration of residence before attack developed in hospital.	Probable cause of attack.	Part where eruption appeared.	Duration of time between action of probable cause and appearance of eruption.	Duration of attack.	Result.	Remarks.
35	M.	50	Caries of tarsus	Edward	77 days	Syme's amputation	Stump	12 days	45 days	C.	A small abscess opened near stump the day before appearance of eruption.
36	F.	30	Disease of ankle-joint; no sinuses	Alexandra	20 „	Examination under æther	Face	1 „	8 „	C.	Has had previous attacks.
37	F.	11	Disease of knee-joint	„	207 „	?	Wound	?	20 „	C.	Cause probably probing of sinus remaining after excision (12 days after admission).
38	M.	27	„	Leopold	225 „	Removal of small sequestrum after excision	„	5 „	7 „	C.	
39	F.	14	Suppuration in knee-joint	Elizabeth	88 „	Operation, removal of diseased patella	„	10 „	17 „	C.	
40	M.	19	Abscesses in connection with strumous knee	Leopold	7 „	? Cold	Face	?	12 „	C.	
41	F.	44	Chronic disease of hip; abscesses	Elizabeth	204 „	Incision of abscess	Wound	4 „	7 „	D.	Right pleurisy.
42	F.	49	Disease of shoulder-joint	Alexandra	29 „	Excision of joint	„	15 „	20 „	C.	
43	F.	2	Old excision, elbow; sinuses, caries of humerus (2nd attack)	Victoria	30 „	Operation	„	15 „	15 „	C.	
				„	76 „	? Tapping frontal abscess; ? dressing wound	Arm around wound	? 4 „	6 „	C.	
44	M.	43	Enlargement of popliteal bursa	Leopold	30 „	Removal	Around wound	? 27 „	23 „	C.	
45	F.	2	Double talipes	Victoria	60 „	Tenotomy	Left foot	21 „	17 „	C.	

46	M.	56	Sinuses about pubes (2nd attack)	Leopold Erysipelas Ward	16 „ 69 „	Operation ? Exposure	Left thigh Lower extremity	10 „ ?	9 „ 5 „	C. D.	Erysipelas of wandering character. Suppuration in knee-joint.
47	M.	12	Abscess of stump	Albert	7 „	Incision	Stump	6 „	7 „	C.	
48	F.	11	Chronic abscess of thigh	Elizabeth	31 „	? „	Wound	29 „	13 „	C.	
49	F.	34	Cellulitis of leg	„	24 „	Incisions	„	2 „	12 „	C.	
50	F.	37	„	Alexandra	19 „	„	„	17 „	12 „	C.	
51	M.	21	Conical stump	Albert	18 „	Reamputation	„	13 „	43 „	D.	Osteomyelitis, chronic dysentery, tubercular nephritis. Eruption curiously symmetrical.
52	F.	15	Ulceration of lower extremities after burn	Alexandra	86 „	? Grafting	Left thigh	?35 „	12 „	C.	
53	M.	10	Scald of leg	Edward	31 „	?	Foot	?	5 „	C.	
54	M.	31	Scalp wounds	„	12 „	? Sloughing	Scalp	? 7 „	10 „	C.	
55	M.	50	Wound of scalp and leg	„	2 „	?	„	? 2 „	12 „	C.	Contused wounds.
56	M.	11	Scalp wound with exposure of bone (2nd attack)	Albert „	1 „ 21 „	Wound Incision for abscess of scalp	„ „	1 „ 10 „	5 „ 4 „	C. C.	
57	M.	29	Fracture of base of skull, small scalp wound	„	9 „	The injury	„	9 „	5 „	D.	See Pyæmia.
58	M.	28	Scalp wounds and fracture of radius	Edward	5 „	„	„	5 „	24 „	D.	Alcoholic history; albuminuria.
59	F.	75	Wound of ear and fracture of ribs	Elizabeth	7 „	Wound of ear	Ear and face	7 „	2 „	D.	Granular kidneys.
60	F.	22	Fracture of inferior maxilla, compound; scalp wounds	„	14 „	Wound of jaw	Wound	?14 „	10 „	C.	
61	M.	32	Lacerated wound of groin	Edward	5 „	Wound	„	?5 „	19 „	D.	Old dysentery.
62	F.	28	Lacerated wound of leg	Elizabeth	9 „	„	„	9 „	10 „	C.	
63	M.	15	Lacerated wound of the perinæum, fracture of clavicle	Albert	5 „	„	„	?5 „	13 „	D.	Right pleuro-pericarditis.
64	M.	37	Contused wound of leg, very severe (2nd attack)	Edward „	83 „ 132 „	„ Sinus probing	„ „	? ?	16 „ 10 „	C. C.	

Special Table III.—*Erysipelas (continued).*

No. of case.	Sex.	Age.	Disease for which admitted.	Ward in which erysipelas arose.	Duration of residence before attack developed in hospital.	Probable cause of attack.	Part where eruption appeared.	Duration of time between action of probable cause and appearance of eruption.	Duration of attack.	Result.	Remarks.
65	M.	60	Contused wound of leg	Edward	3 days	Wound	Wound	3–13 days	6 days	C.	Want of attention during 8 days before admission probable cause.
66	M.	29	„	Albert	9 „	„	„	?9 days	7 „	C.	
67	M.	58	Contused wound of leg and fracture of rib	Edward	28 „	?	„	?	5 „	C.	Pleurisy.
68	M.	21	Contused wound of leg (2nd attack)	„	8 „	Wound	„	?8 „	7 „	C.	
				Erysipelas Ward	18 „	Wound (exposure)	„	?	14 „	C.	
69	M.	32	Ununited fracture of femur	Edward	198 „	Operation, incision for subsequent abscess	„	17 „	6 „	C.	
			(2nd attack)	„	235 „	?	„	?	10 „	C.	
			(3rd „)	„	256 „	Incisions	„	?	4 „	C.	
			(4th „)	„	285 „	Amputation	„	?26 „	3–4 „	C.	
70	F.	9 mos.	Fracture of femur	Victoria	4 „	Superficial sores	Over knee	4 „	5 „	C.	
71	M.	9	Fracture of tibia	Edward	16 „	Grazing of skin of knee	„	?	5 „	C.	
72	M.	33	Fracture of tibia and fibula, compound	„	43 „	Wound	Wound	?	6 „	C.	
			(2nd attack)	„	107 „	Removal of dead bone	„	11 „	10 „	C.	

OPHTHALMIC REPORT.

STATISTICAL REPORT

OF

THE OPHTHALMIC DEPARTMENT

FOR THE YEAR 1883.

By F. W. MARLOW,
LATE OPHTHALMIC CLINICAL ASSISTANT.

During the year there were 3150 new patients (exclusive of renewed letters). 283 in-patients were admitted, and 276 major operations performed.

Analysis of In-patients.

Cataract, senile	36	Sympathetic inflammation	2
„ lamellar	8	Conjunctivitis, muco-purulent	1
„ traumatic	4	„ with ulceration of cornea	6
„ congenital	1	Granular lids and pannus	14
„ soft	1	Ulceration of cornea	31
„ pyramidal	1	Abscess of cornea	1
„ secondary	1	Keratitis, heredito-syphilitic	15
Membrane after extraction	4	Sclero-Keratitis	2
Glaucoma, acute	2	Nebulæ and Leucomata	8
„ chronic	7	Conical cornea	1
„ secondary	3	Iritis, syphilitic	5
Wounds of eyeball	24	„ rheumatic (recurrent)	3
Rupture of eyeball	2	Irido-choroiditis	2
Foreign body in eye	3	Irido-cyclitis (syphilitic)	1
„ in cornea	1	Iris, multiple growths on	1
„ in lens	1	Hyalitis, syphilitic	1
Sympathetic irritation	7		

Retinitis, syphilitic	4
„ with hæmorrhages (cause unknown)	1
Choroiditis, disseminated	2
„ localised	1
„ acute	1
Sarcoma of choroid	3
Detachment of retina	1
Presbyopia	1
Myopia and threatened glaucoma	1
Amblyopia, hysterical	1
„ tobacco	1
Amaurosis following blow on eye	1
Hemianopia and intracranial disease	1
Orbital cellulitis	1
„ tumour	1
„ necrosis	2
Optic neuritis (double)	1
Night-blindness	1
Nævus of upper lid	1
Rodent ulcer of lids	1
Cystic tumour of brow	1
Dermoid cyst	2
„ tumour of cornea	1
Lupus of conjunctiva	1
Lacrimal obstruction	5
Epiphora from facial paralysis	1
Strabismus, divergent	2
„ convergent	2
Congenital dislocation of lenses	1
Symblepharon	1
Trichiasis	2
Drooping of lower lid after excision	1
Ectropion	2
Gangrenous inflammation of eyelid	1
Anterior staphyloma	5
Lost eyes	4
Readmissions	23
	283

The following is a list of the chief operations performed:

(*The figures refer to the number of eyes.*)

Removal of cataract—59:	
Extraction	42
Suction	6
Complicated extraction	1
Curette extraction	7
Removal of pyramidal cataract	2
„ shrunken cataract	1
Attempted extraction	4
Discission after extraction	11
Iridotomy after cataract extraction	7
Iridectomy „ „	1
„ for acute glaucoma	2
„ for chronic „	2
„ for absolute „	1
„ for secondary glaucoma	9
„ for iritis	4
„ for prolapse of iris	10
„ for artificial pupil	11
Iridectomy for ulcer	4
„ preliminary to extraction	1
Sclerotomy	9
For conical cornea	1
Iridectomy and partial extraction after wound	3
Iridectomy and removal of steel by magnet	1
Förster's operation for ripening cataract	4
Tenotomy of internal rectus—24:	
By Critchett's method	3
„ Liebreich's „	13
„ Graefe's „	2
„ Snellen's „	6
Tenotomy of external rectus—10:	
By Critchett's method	3
„ Liebreich's „	4
„ Graefe's „	3
Tenotomy of superior rectus	2
Advancement of internal rectus	2
Peritomy	6
Excision of eyeball	49
Operation for symblepharon	1
„ trichiasis	3

Operation for ectropion	1	Saemisch's operation	3
„ nævus	3	Ulcers scraped	6
Union of lids	2	Lupus scraped	5
Canthoplasty	2	Necrosis in orbit	1
Orbital tumour	1	Dermoid tumour of cornea	1
Rodent ulcer and plastic operation	1	„ cyst of brow	1
For lacrimal obstruction	11		280

Analysis of Cataract Operations.

I.—Extractions of hard cataract—42.

The section was made upwards in every case except one, No. 17, in which it was made downwards.

An iridectomy was done in every case at the time of the extraction, except in No. 17.

Eserin was used previously to the operation in the first six cases; its use, before the operation, was then discontinued, on account of the bleeding from the iris which it appeared to encourage. After the operation it was used four times during the first forty-eight hours, except in Cases 11, 13, 17, 31.

In twenty-four cases no anæsthetic was used. Of the remaining eighteen cases, chloroform was administered in twelve cases, chloroform with methylic alcohol in four cases, ethedene in one case, and the A. C. E. mixture in one case.

The dressing used consisted of a piece of dry linen and a compress of absorbent wool kept in position by a flannel bandage or a four-tailed knitted bandage.

Atropine was commenced on the third day after the operation in every case except No. 32, and was used twice daily until about the fourteenth day; and in cases where there was iritis, more frequently.

II.—Operations for removal of soft cataract—17.

In these cases the pupil was always dilated by atropine before the operation.

In nine cases a preliminary needling was done. After the operation atropine was used every one or two hours, and iced compresses were applied for about the first forty-eight hours.

Suction with Bowman's syringe was performed in six cases; curette extraction in seven cases.

Table I.—*Extractions of Hard Cataract*—42.

No.	Name. Date.	Sex.	Age.	Anæsthetic.	Vomiting.	Operation.	Progress of case.	Secondary operation.	Result.
1	E. G. Jan. 2nd	F.	66	None	—	Extraction of right upwards with iridectomy; lens extruded by spasm of lids after removal of speculum; small hard nucleus; pupil under eserine very small	Favorable; some membrane in p.	Needle 18 days after extraction	1 month after extraction V = 10 J. letters. 4 months after extraction V = $\frac{20}{100}$ and 8 J. Is a poor reader.
2	C. B. Jan. 26th (same as No. 20, 1882)	F.	63	Chloroform after brandy	None	Extraction of left upwards with large iridectomy; section large; extraction with Snellen's loop, but capsule ruptured; some vitreous lost	No iritis; grey striated membrane formed in coloboma and pupil behind the level of iris	—	3 weeks after extraction V = 16 J. Sept., 1883, V = $\frac{20}{200}$ and 16 J. Opacities in vitreous.
3	E. C. Feb. 12th	F.	72	None	—	Extraction of right upwards with iridectomy; corneal section; lens small, nucleus hard	Favorable	—	1 month after operation V = $\frac{20}{100}$ and 1 J. Has not been seen since.
4	D. B. March 6th	M.	61	None	—	Pupil under eserine very small; right extraction upwards with iridectomy; incision at sclero-corneal junction; lens extruded by spasm of lids after removal of speculum; free escape of watery vitreous	8 days after extraction keratitis striata; 1 month later formation of dense membrane in pupil, beginning in coloboma. Aug. 14.—T—3, slight ciliary congestion. ? p. l.	Excision. Aug. 14, 1883, T—3, ciliary congestion, eye tender, V = bare p.l.	Loss. This patient had chronic palpebral conjunctivitis of old standing with ectropion of both lower lids.
5	D. B. March 20th	M.	61	(1) gas, (2) A. C. E. mixture	None	Extraction of left; pupil under eserine very small; corneal incision; moderate-sized iridectomy; only a small flake of soft matter left; no loss of vitreous	2 or 3 weeks after operation thin membrane appeared in pupil, and gradually increased. Aug. 14.—T. sl. +, no a.c.,	(1) iridotomy; (2) some weeks later attempted iridectomy	Good p. l.

							wound vascular and pupil drawn up and filled with membrane		
6	M. A. P. April 27th	F.	60	None	—	Extraction of right upwards with iridectomy; Wecker's section; lens large and hard, and incision rather short; pupil under eserine; some bleeding from iris	Favorable	—	1 month after V = $\frac{20}{30}$ partly and 1 J. Astigmatism = 2 D.
7	M. A. P. May 11th	F.	60	None	—	Extraction of left upwards with iridectomy; Wecker's section; much soft cortex, but pupil left black; no bleeding into a. c.; no eserine had been used	Some iritis. Blisters, hot wool, and atropine	—	6 weeks later V = $\frac{20}{70}$ fairly and 2 J. fairly; astigmatism = 2·5 D. (She returned in Aug., 1883, with double iridocyclitis, which reduced V in right to $\frac{20}{200}$ and 14, left to fingers at 3′.)
8	A. B. May 1st	F.	65	None	—	Extraction of right upwards with iridectomy; Wecker's section; lens escaped spontaneously after opening capsule; no loss of vitreous	No evidence of iritis; but there was severe ciliary congestion, pain, and photophobia. Blisters and atropine	—	7 weeks after extraction V = $\frac{20}{50}$ and 1 J. well.
9	M. B. May 4th	F.	69	None	—	Extraction of right upwards with iridectomy; Wecker's section; a small piece of opaque lens matter left	Slight iritis. Treated with atropine	—	1 month after V = $\frac{20}{40}$ partly and 1 J.
10	H. S. May 8th	M.	59	None	—	Extraction of left upwards with iridectomy; lens escaped spontaneously after capsule was opened; Wecker's section. Behaved very badly	Conjunctival wound healed readily, but the deep lips remained separated by vitreous for 3 or 4 weeks; no iritis. Very restless patient	None	3 weeks after V = 6 J.

No.	Name and date.	Sex.	Age.	Anæsthetic.	Vomiting.	Operation.	Progress of case.	Secondary operation.	Result.
11	J. D. May 18th	M.	75	None	—	Extraction of right upwards with iridectomy; pupillary border of iris not removed; Wecker's section; lens large and hard; after its removal considerable loss of rather fluid vitreous. No eserine after operation	Vitreous continued to ooze for 24 hours after operation; suppurative iritis, which was relieved by spontaneous reopening of wound; no return of pus in a. c., but the eye kept tender and became soft	Excision; eye soft and tender; well-defined bulging abscess in ciliary processes	Lost.
12	J. D. June 8th	M.	75	Chloroform	No vomiting noted	Extraction of left upwards; lens large and firm; Wecker's section	Slight iritis. Treated with atropine	—	3 weeks after operation $V=\frac{20}{100}$ well, and 1 J. letters. Never a good reader.
13	T. M. May 22nd	M.	63	„	None	Extraction upwards of right with iridectomy; Wecker's section; lens extruded by spasm of lids after opening of capsule; loss of much vitreous; lens removed with scoop. No eserine after operation	Favorable	—	1 month after operation $V=\frac{20}{100}$ partly and 4 J. letters. (Very stupid patient, and unable to read.)
14	T. M. June 12th	M.	63	„	None	Extraction of left upwards with iridectomy; Wecker's section	Favorable	—	14 days after operation $V=\frac{20}{200}$ and 8 J. letters. (Probably saw very much better than this represents.)
15	J. J. May 18th	M.	68	„	None	Extraction of left upwards; Wecker's section; very large iridectomy; lens hard, translucent	Slight iritis	—	12 months afterwards $V=\frac{20}{50}$ partly and 2 J. slowly; some words of 1 J.
16	A. M. June 1st	F.	63	„	None	Extraction of left upwards; Wecker's section; iridectomy; cortex semi-soft; all came out clean	Favorable	—	3 weeks afterwards $V=\frac{20}{70}$ partly and 4 J.
17	T. T. June 12th	M.	54	None	—	Downward; slightly scleral section; no iridectomy; greater part of lens squeezed out; it was quite soft.	Slight iritis. Treated with leeches and atropine	—	V not recorded.

						Traumatic cataract, with wound of cornea and anterior synechia of 3 months' standing			
18	M. C. June 29th	F.	79	Chloroform	None	Extraction of left upwards with iridectomy; Wecker's section; lens large and hard	Slight iritis	—	1 month after operation V = $\frac{20}{100}$ and 1 J.
19	E. B. July 6th	F.	65	Ethedene	Considerable	Extraction of right upwards with iridectomy; Wecker's section; some opaque matter left	Favorable	—	3 weeks after operation V = $\frac{20}{70}$ and 1 J. No astigmatism.
20	K. E. July 27th	F.	60	None	—	Extraction of left upwards with iridectomy; pupil left black; Wecker's section	Favorable; some opaque matter in pupil	Membrane cut with shears	Oct. 28.—V = $\frac{20}{0}$ and 14 J. No reason for defect could be found with ophthalmoscope. (Patient was a chronic lunatic.)
21	E. T. Aug. 9th	F.	64	Chloroform and methylic alcohol	None	Extraction of right upwards with iridectomy; Wecker's section. Cataract almost Morgagnian	Favorable	—	3 weeks after operation V = $\frac{20}{100}$ and 8 J. Nov. 1883.—V = $\frac{20}{40}$ partly and 1 J.
22	E. T. Oct. 16th	F.	64	Chloroform	Vomited once	Extraction of left upwards with iridectomy; Wecker's section; lens large, hard, and came out clean	Favorable	—	1 month after operation V = $\frac{20}{50}$ well, $\frac{20}{40}$ partly, and 1 J. slowly.
23	A. H. Aug. 10th	F.	68	None	—	Extraction of left upwards with iridectomy; Wecker's section; vitreous presented, but did not escape	Small prolapse of iris at inner angle	Removal of prolapse, Feb., 1884	Aug. 31.—$\frac{20}{200}$ and 19 J.
24	E. W. Aug. 14th	F.	71	None	—	Extraction of right upwards with iridectomy; section corneal; loss of rather fluid vitreous	Iritis, and atropine irritation	Iridotomy in Oct., '83, followed by occlusion of pupil with membrane. Iridectomy downwards in April, '84	8 months after operation V = $\frac{20}{70}$ partly and 8 J. slowly.
25	E. M. Aug. 17th	F.	50	None	—	Extraction of left upwards with iridectomy; Wecker's section; a good deal of soft matter removed after small nucleus	Favorable	—	18 days after operation V = $\frac{20}{70}$ and 8 J. Nov. 1883.—$\frac{20}{70}$ and 1 J. Astigmatism = 1 D.

No.	Name and date.	Sex.	Age.	Anæsthetic.	Vomiting.	Operation.	Progress of case.	Secondary operation.	Result.
26	S. S. Aug. 24th	F.	53	None	—	Extraction of left upwards in capsule with Pagenstecher's spoon; considerable loss of healthy vitreous	Favorable	—	14 days after operation V=$\frac{20}{100}$ and 1 J. words slowly. Dec., 1883.—V=$\frac{20}{40}$ and 1 J. well. Astigmatism=3·5 D.
27	J. H. Aug. 27th	F.	70	Chloroform	None	Extraction of right upwards with iridectomy; Wecker's section; much soft cortex removed	Favorable	—	1 month after operation V=$\frac{20}{100}$ partly and 4 J. Astigmatism=3 D.
28	E. D. Aug. 31st	F.	52	,,	None	Extraction of right upwards with iridectomy; much soft matter	Favorable	—	Chronic glaucoma, probably of 9 years' duration; p. l. as before operation.
29	J. S. Aug. 31st	M.	76	None	—	Extraction of left upwards with iridectomy; Wecker's section; lens came out quite clean	Favorable	Membrane needled 4 months later	4 months after operation V=$\frac{20}{50}$ partly and 1 J. Astigmatism=2 D.
30	J. S. Sept. 14th	M.	76	None	—	Extraction of right upwards with iridectomy; Wecker's section, but inner end too scleral; loss of healthy vitreous, and extraction with Pagenstecher's spoon	Moderate iritis; hot wool, blisters, and atropine	Did not want anything more done	4 months after operation V=14 J. badly; membrane in pupil obscuring fundus. Astigmatism=2 D.
31	T. E. J. Sept. 7th	M.	72	Chloroform	None	Extraction of right upwards with iridectomy; Wecker's section; vitreous escaped during iridectomy; extraction in capsule with Pagenstecher's spoon; a. c. shallow, and left nearly full of blood. No eserine after operation. (Patient not completely under anæsthetic)	Delirium, chiefly at night, during nearly the whole of his stay in hospital; acute glaucoma of left eye coming on 3–4 days after extraction of right	—	6 weeks after extraction V=14 J. badly.
32	T. E. J. Sept. 14th	M.	72	Chloroform and methylic alcohol	None	Extraction of left upwards with very large iridectomy; Wecker's section; much soft matter got out after removal of nucleus. This operation was done during an attack of acute glaucoma	Iritis	March, '84, iridectomy downwards	5 weeks after extraction V=18 J. V not taken after iridectomy.

33	E. W. Sept. 7th	F.	68	„	None	Extraction of left upwards with iridectomy; Wecker's section; small flake of opaque matter left	Favorable	—	17 days after operation V=$\frac{20}{100}$ and 10 J. 9 mos. after operation V=$\frac{20}{70}$ partly, and 1 J. slowly. Astigmatism 2·5 D.
34	A. M. Sept. 18th	F.	56	None	—	Extraction of left upwards with iridectomy; Wecker's section; small hard nucleus; much soft cortex	Favorable	—	Thin membrane; 16 days after operation V=16 J. 2 months after extraction V=not $\frac{20}{200}$ and 8 J; still membrane in pupil.
35	H. P. Sept. 21st	F.	64	Chloroform and methylic alcohol	Vomited freely all night	Extraction of left upwards with iridectomy; Wecker's section; lens large; cortex sticky	Slight iritis	—	13 days after operation V=$\frac{20}{100}$ and 14 J.; thin memb. in pupil. Jan., 1884.—$\frac{20}{70}$ partly, 2 J. slowly; still some thin memb. Astig.=1·5. D.
36	M. W. Oct. 12th	F.	65	Chloroform	Vomited once	Extraction of right upwards with iridectomy; Wecker's section; lens hard and rather large, came out clean; some blood left in anterior chamber	Severe iritis coming on 14 days after extraction, followed by occlusion of pupil	Iridectomy downwards 7 months after extraction	May, 1884.—V = 16 J. words.
37	H. O. Oct. 19th	F.	69	None	—	Extraction of right upwards with iridectomy; Wecker's section; lens of moderate size, hard, and very brown; came out clean	Favorable	—	3 weeks after extraction V=$\frac{20}{50}$ and 2 J. fairly, nearly 1 J.
38	H. F. Oct. 23rd. Diabetic	F.	63	None	—	Extraction of right upwards with iridectomy; lens of good size; clean; free hæmorrhage into a. c., which recurred on being let out; Wecker's section	Subacute plastic iritis, with occlusion and drawing up of pupil	—	6 weeks after operation V=large objects moving.
39	S. R. Oct. 26th	F.	51	None	—	Extraction of right upwards with iridectomy; Wecker's section; hard, small nucleus, followed by a good deal of soft cortex; a. c. left full of blood	Slight iritis	—	3 months after operation V=$\frac{20}{40}$ partly and 1 J. slowly. Astig.=1·5.

No.	Name and date.	Sex.	Age.	Anæsthetic.	Vomiting.	Operation.	Progress of case.	Secondary operation.	Result.
40	E. P. Nov. 16th	F.	65	None	—	Extraction of left upwards with iridectomy; Wecker's section; capsule tough, and cataract over-ripe; nucleus would not present; loss of healthy vitreous; extraction with Snellen's loop	Cyclitis, with attacks of severe pain, and the formation of opaque membrane in pupil; treated with hot wool, leeches, and dry cupping; spasmodic entropion	—	Jan., 1884.—Fingers at 1′.
41	E. W. Dec. 7th	F.	44	None	—	Extraction of left upwards with iridectomy; Wecker's section; lens hard and large; came out while lids were closed under dry pad; some soft matter removed afterwards	Favorable	Needle to remains of capsule 10 weeks after extraction; second free needling 3 wks. later	3½ months after extraction V = less than $\frac{20}{200}$ and less than 20 J.
42	R. G. Dec. 11th	M.	81	None	—	Extraction of right upwards with iridectomy; no speculum or fixation forceps used; Wecker's section, but too corneal; nucleus hard and small; much soft matter removed afterwards	Suppurative panophthalmitis beginning within 24 hours	Excision 6 days after extraction	Loss.

TABLE II.—*Operations for Removal of Soft Cataract*—17.

43	M. H. Jan. 9th	M.	6	Ether	Slight	Curette extraction of old traumatic cataract through small corneal incision; a good deal of lens matter left	Favorable	—	Left hospital with pupil full of opaque lens matter.
44	E. P. Jan. 16th (same as No. 37, 1882)	F.	7	None	„	Curette extraction of right; incision with keratome up and out; no iridectomy; lamellar cataract	Favorable	—	V $\left\{ \begin{matrix} \text{R.} \\ \text{L.} \end{matrix} \right\}$ + 20 D. = $\frac{20}{50}$.
45	E. P. Jan. 16th	F.	13	None	—	Curette extraction of right; incision with keratome up and out; no iri-	—	—	V + 10 D. = $\frac{20}{70}$ with each. + 16 D. = 10 J.

	(same as No. 38, 1882, sister of No. 44)					dectomy; lamellar cataract			
46	T. C. April 27th	M.	22	None	—	Curette extraction of right upwards; incision with keratome; lens completely removed; small prolapse of iris cut off; soft recent cataract	Favorable	Needled May 22	5 weeks after operation V = $\frac{20}{100}$ and 1 J.
47	T. C. May 4th	M.	22	None	—	Curette extraction of left; edge of iris prolapsed, but was returned by rubbing lids; soft recent cataract	Threatened iritis, treated by leeches and atropine	„	4 weeks after operation V = $\frac{20}{100}$ and 1 J.
48	F. C. May 15th	F.	6½	Nitrous oxide and ether	None	Curette extraction of right; needled 4 days previously; no iridectomy; some streaky cortex left; lamellar cataract	Favorable	—	Still opaque matter in pupil on discharge; 3 months after operation V = 14 J., probably more.
49	H. P. June 22nd	F.	7	Ether	None	Curette extraction of right, of 14 days' standing; only one third of lens removed; traumatic cataract	Favorable	—	Still opaque matter in pupil on discharge, Aug., 1884; dense membrane in pupil, with very small gap; V = some letters of 14 J.
50	E. B. June 15th	M.	6	„	None noted	Right large pyramidal cataract and part of shrunken lens removed with iris forceps; iridectomy. Had been needled 18 months previously	Favorable	—	6 weeks after operation V was considerably improved, but patient was too young to test V.
51	E. B. July 20th	M.	6	„	None noted	Left large pyramidal cataract removed through small corneal incision with Graefe's straight iris forceps; lens soft and opaque, partly squeezed out; small iridectomy; no previous needling	Favorable	—	On discharge pupil still filled with opaque lens matter. 1884.—Secondary operation with good result.
52	A. W. Aug. 31st	F.	22	None	—	Extraction of left downwards; very little iris could be got away; lens capsule extremely tough, opened with cystotome; greater part of lens, which was soft, squeezed out. The section was chiefly in opaque cornea. Cataract secondary to syphilitic kerato-iritis	Severe pain after operation, relieved by leeches; no other unfavorable symptoms	6 weeks later a band of iris across pupil was cut	6 weeks after extraction V = 16 J. letters. Haze of cornea and choroiditis. Nov., 1884.—About the same.

No.	Name and date.	Sex.	Age.	Anæsthetic.	Vomiting.	Operation.	Progress of case.	Secondary operation.	Result.
53	A. D. Aug. 23rd	F.	14	Ether	None	Suction of right; needled 2 days previously; nearly all lens matter removed; lamellar cataract	Favorable	—	3 months after operation V=$\frac{20}{50}$ and 1 J. well.
54	T. H. B. Aug. 27th	M.	8	„	Considerable for 1½ hours	Suction of right; needled 3 days previously; nearly all the lens matter removed; lamellar cataract	Favorable	—	7 months later V=$\frac{20}{100}$; near vision not noted.
55	T. H. B. Nov. 2nd	M.	8	„	None	Suction of left; needled 3 days previously; nearly all the lens was removed; a small bead of vitreous protruded and was cut off; lamellar cataract	Favorable	—	5 months later V=$\frac{20}{100}$; near vision not noted.
56	R. W. Aug. 31st	F.	12	„	None	Removal of shrunken concussion cataract with canula forceps through small corneal section; large bead of vitreous lost	Favorable	—	10 days after operation pupil round and black; vision not recorded.
57	E. P. Oct. 8th	M.	10	„	None	Suction of left; needled 3 days previously; not much removed except the opaque centre; lamellar cataract	Favorable	—	3 months after operation V=$\frac{20}{70}$ well and 1 J.
58	F. S. Oct. 16th	F.	9	„	None	Suction of right; needled 4 days previously; the greater part of lens was removed; lamellar cataract	Favorable	—	9 months later V=$\frac{20}{100}$ and 6 J. words.
59	E. S. P. Dec. 2nd	F.	40	„	None	Suction of left; needled 2 days previously; the greater part of lens matter removed; lamellar cataract progressing towards completion	There was increase of T. the day after needling, relieved by leeches to the temple; iritis treated by leeches after the suction	—	1 month after operation V=$\frac{20}{100}$ partly and 6 J. letters; still membrane in pupil.

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St. Thomas's Hospital

MEDICAL SCHOOL.

CALENDAR

AND

PROSPECTUS

FOR THE

YEAR COMMENCING OCTOBER 1ST, 1884.

1884 & 1885.

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TABLE OF CONTENTS.

	PAGE
Winter and Summer Sessions	5
Introductory Address...	5
Annual Dinner	5
Historical Notice of the Hospital and School ...	5
General Description of the Hospital and School ...	14
Number of Patients	14
Nightingale Training School	15
Medical and Surgical Officers and Lecturers ...	16, 17
Lectures and Demonstrations	18
Tables of Days and Hours of Attendance	19, 20
Special Departments	21
Suggestions to Students	22, 23
Fees	24, 25
Classes for London University Examinations ...	26
Entrance and other Scholarships, Prizes and Appointments	27
Regulations for Examination and Classification of Students	30
Prize Lists	31
Museum	34
Medical and Physical Society	37
St. Thomas's Hospital Reports	38
Calendar	39–50
List of Students who have obtained Honours ...	51–66

Full information on all matters connected with the Medical School, Prizes, &c., will be obtained on application to the Medical Secretary, Mr. G. RENDLE, *at the Hospital, Albert Embankment, S.E.*

A Register of Lodgings suitable for Students has been recently revised, and is kept in the Secretary's Office. Information as to terms, accommodation, &c., can be obtained on application. This Register has been especially prepared, with a view to the convenience of gentlemen newly arriving in town, without definite arrangements having been made for their accommodation in lodgings or otherwise.

Several Medical Practitioners and Private Families residing in the neighbourhood receive Students for residence and supervision.

There is a Restaurant in the Medical School where Students can take their meals at moderate charges.

St. Thomas's Hospital

MEDICAL SCHOOL.

The WINTER SESSION 1884 – 85 will commence on WEDNESDAY, OCTOBER 1st, and terminate on MARCH 31st.

The SUMMER SESSION will begin on MAY 1st, and terminate on JULY 31st.

An Introductory Address will be given by Sir J. RISDON BENNETT, M.D., F.R.S., in one of the Theatres of the Hospital on Wednesday, October 1st, at 3 P.M., after which the various Departments of the Hospital and School will be thrown open in working order for the inspection of Visitors.

Refreshments will be provided in the Library.

The Annual dinner, in which all former and present Students are invited to join, will take place the same evening in the Governors' Hall, at 6 for 6.30.

The Annual Distribution of Prizes will be made during the Summer Session.

ALL accounts agree in attributing the origin of St. Thomas's Hospital to circumstances more or less accidental. In Stow's "Survey of London," we find "that a fire happened in the Borough of Southwark in the year 1207, which destroying the Priory of St. Mary Overie, the Canons erected an Hospital hard by for the celebration of divine service, till their Monastery could be rebuilt; which they, soon after, accomplishing, Peter de Rupibus, or de la Roche, Bishop of Winchester, for the greater convenience of air and water, removed the said Hospital in the year 1215, and erected it in a place where Richard, Prior of Bermondsey, but two years before had built an Almonry or Almshouse for the reception of indigent children and necessitous Proselytes, and

having dedicated the same to St. Thomas the Apostle, endowed it with land to the amount of three hundred and forty-three pounds per annum."

It is difficult to say whether it is owing to deficiency of historical accuracy in Maitland (from whom the above is quoted), or to excess of orthodoxy, that he names St. Thomas *the Apostle*. Certain it is, however, that Peter de la Roche denominated its foundation "The Spital of St. Thomas the Martyr of Canterbury," in honour of Thomas à Becket whose shrine in Canterbury Cathedral was already drawing what Chaucer aptly terms "shoals" of pilgrims down the "Old Kent Road," and past the very door of the Hospital to the Tabard Inn.

The next fact of importance seems to be the cession of the Hospital by the Prior of Bermondsey to a President, Master and Brethren, in 1482; unless we note an altercation in 1252 between the then Archbishop of Canterbury and the Bishop of Winchester for the patronage of it. This ended in favour of the latter, whose palace hard by survives in name, and partly in structure to the present day, as Winchester House. From an estimate formed about the later of these dates, it appears there were a master and brethren, and three lay-sisters, residing in the Hospital; forty beds were made up for poor, infirm and impotent people, all of whom had victuals and firing allowed to them.

From this time, Golding truly says, nothing of importance occurred either in the government or revenues of St. Thomas's Hospital until the 26th year of Henry VIII., when an estimate was formed of the latter, which were found to amount to the annual sum of £347. 3s. 6d. It is not to be wondered at that we have so little to record during these early times; for the "Hospitium" dependent on the rich Abbey of Bermondsey was, as the name strictly implies, more an Almshouse than a Hospital. No doubt the sick found their way into it with other distressed persons; and no doubt some learned monk, using the shelter and leisure of the cloister for researches in alchemy and medicine, was told off to minister to their

physical necessities. The brotherhood of the Rosy Cross, to which Gower, now lying in the neighbouring church, belonged, was intimately connected with the early quest after Arcana and Elixirs of Life which represented the science of the time.

In the year 1535, Henry VIII. was excommunicated by Pope Paul III., and, declaring himself head of the church, proceeded to dissolve the Catholic houses, whose large revenues went to the Crown. There seem to have been 645 monasteries and abbeys thus treated, twenty-eight of which had abbots with seats in Parliament, ninety colleges and free chapels, and 110 hospitals of various descriptions. It is certainly in favour of the sweeping change that so able and honest a man as Sir Richard Gresham, the Lord Mayor of London, should have put his hand to the following petition to the King:

"Most redowted, puysant, and noble Prince * * * *—nere and within the cytie of London be iij hospitalls or spytells commonly called Seynt Georges Spytell, Seynt Barthilmews Spytell, and Seynt Thomas Spytell, and the new Abbey of Tower Hill, founded of good devotion by auncient fathers, and endowed with great possessions and rents only for the reliefe, comforte, and helping of the poore and impotent people lying in every street, offending every clene persone passing by the way with theyre fylthy and nasty savors. Wherefore may it please your merciful goodness, enclyned to pytie and compassion, for the reliffe of Xts very images, created to his own similitude, to order by your high authoritie, as supreme head of this Church of England, or otherwise by your sage discretion, that your mayer of your cytie of London, and his brethren the aldermen for the time being, shall and may from henceforth have the order, disposition, rule and governaunce both of all the lands, tenements, and revenues apperteynyng and belongyn to the said Hospitals, governors of them, and of the ministers which be or shall be withyn any of them, and then your grace shall facilie perceyve that where now a small number of Chanons, Priests, and Monkes be founde for theyr own profitt only, and not for the common

utilitie of the realme, a great number of poore, needy, syke and indugent persones shall be refreshed, maynteyned, and comforted; and also healed and cured of their infermities frankly and freely by physicions, surgeons and potycaries, which shall have stipende and salarie only for that purpose; so that all impotent persones not able to labour shall be releved, and all sturdy beggars not willing to labour shall be punished."

St. Thomas's Hospital being claimed by the King as Church property, was surrendered to him by Thomas Thirleby, the then master, on the 15th July, 1538. It was called St. Thomas à Becket's Spittil. Its yearly revenue was estimated at £266. 17s. 6d., and an annual pension of 5s. 8d. was payable by the master, and another of 2s. 1d. by the curate, to the Archdeacon of Surrey. Soon after the seizure, we find that the Citizens of London purchased of the Crown some of its landed estates, producing about £160 yearly. The want of the hospital thus destroyed was felt immediately. Wounded soldiers from the army in France, and the sick poor in general were without provision or help, and Henry proposed granting to the City the Mansion house of St Bartholomew's, the dissolved house of Grey Friars adjoining, and the unoccupied fabric of St. Thomas's Hospital. The latter was intended by Henry to receive the name of the Hospital of the Holy Trinity, and to be allotted exclusively to lame, wounded, and diseased soldiers. The monastery of Grey Friars was to be for the education and maintenance of fatherless children and those of poor parents. The intentions of Henry were overtaken by death, but not before he had conferred upon the Citizens of London the Hospital of St Bartholomew's and also that of Bethlem for lunatics.

It is from the death of Henry that the connection of St. Thomas's Hospital with the city of London appears to begin. To meet the needs of the sick and destitute who had before depended on the charity of the religious houses, a Committee or Board of Inquiry was instituted by the Citizens, with the sanction of King Edward. About 2,100 souls were reported as fit recipients of relief, as fatherless children and invalids,

or as "Idle rogues of both sexes who were levying contributions on public sympathy by feigned tales of sorrow." It was proposed to establish receptacles for each class in the unoccupied monastic buildings, and a pecuniary contribution was set on foot to complete the work. They bought the dissolved house of the Franciscans or Grey Friars near St. Bartholomew's Hospital, and also by charter from the King received a grant as follows: "That the said mayor, commonalty, and citizens, and their successors, may have and enjoy all the franchises, immunities, and privileges whatever, which any Archbishop of Canterbury, and which the said Charles late Duke of Suffolk, or any master, brethren, or sisters of the late Hospital of St. Thomas in Southwark aforesaid; or any Abbot of the said monastery of St. Saviour, Saint Mary Bermondsey, next Southwark aforesaid, or any prior and convent of the priory of St. Mary Overie, ever had or enjoyed, or which we hold or enjoy, or our most dear father Henry the VIIIth, late King of England, or had enjoyed, or ought to have, hold, and enjoy the same: and that none of our heirs or successors may intermeddle with this our grant."

The Greyfriars became Christ's Hospital, and the Southwark site the Hospital of the Holy Trinity or St. Thomas's. The Lord Mayor and certain citizens then met on the 6th of October, 1552, and constituted themselves by royal permission governors of the hospitals, and almoners of the money collected. The Hospital of the Holy Trinity they named, in compliment to Edward, the "King's Hospital," and ordained it to receive 260 "wounded soldiers, blind, maimed, sick, and helpless objects."

They also directed that 380 children should be received into Christ's Hospital.

To complete the scheme, the old palace of Bridewell, in Blackfriars, where the Emperor Charles V. had lodged in 1522, when on a visit to Henry VIII., and where subsequently Wolsey had lived, was granted to the City by Edward as a house of correction for dissolute persons and idle apprentices, and for the temporary maintenance of distressed vagrants.

Lastly, the lands lately belonging to the Palace of the Savoy were conferred jointly on the three foundations; and a month only before the end of Edward's short reign, he incorporated by a second charter bearing date the 6th of June, 1553, the Lord Mayor and commonalty of the City of London in succession as perpetual governors of Saint Bartholomew's, Christ's, Bridewell, and the king's Hospital (which last received the name of ST. THOMAS THE APOSTLE), and secured to them the possession of all the estates and revenues appertaining to them by previous deeds of gift. So were the royal hospitals founded.

In 1557 the laws were framed and printed under the name of "The Order of the Hospitals of K. Henry the VIII. and K. Edward the VI., viz. St. Bartholomew's, Christ's, Bridewell, St. Thomas's. By the Maior, Cominaltie, and Citizens of London," &c.

Successive bequests and donations continued to augment the property of the charities, but during the reigns of Elizabeth, James I., Charles I., and the Protectorate, there appear few facts to note. In the abstract of the charter of confirmation granted to the City in 1663 by Charles II. on his restoration, we find the charter of Edward acknowledged and confirmed. The Great Fire of London in 1666 injured St. Thomas's in its revenues only; and a fire in Southwark anno 1676, ceased, "as if by divine interposition," at the Hospital, probably a strong and isolated block of building. Shortly after this, however, it was found necessary to rebuild the fabric, and in 1693 subscriptions were opened for this purpose. A long list of benefactions in this and the succeeding year, amounting in all to £37,769. 3s., is given by Golding, who especially singles out Sir Robert Clayton for eulogium. The statue then erected to him, and still extant, was originally dated 1701, but this was altered on his death to 1714. He was the founder of the old square in which it stood, replacing what Golding terms "a low swampy structure of the monastic order." In 1707, Mr. Guy, founder of the neighbouring hospital, erected three wards at his own

charge. In 1717, the back block of buildings adjoining Guy's Hospital was added. With the exception of the two large blocks forming the Borough frontage, the north wing erected in 1833, and the south wing in 1839, the fabric seems to have remained unchanged until its purchase by the railway. In the centre of the front quadrangle stood the brass statue of King Edward, by Scheemakers, erected first in 1737, in pursuance of the will of Charles Joye, some time treasurer of the Hospital. It now stands in the grounds of the New Hospital.

It is a matter of more difficulty to trace the early history of the medical school in connection with the hospital. For the facts which follow we are indebted to the late R. G. Whitfield, Esq., who, from the long period during which his family had been associated with this foundation, was perhaps more qualified to speak than any other person.

The earliest mention in the hospital books of an apprentice is on December 31st, 1561. It is not until 1702 that a law is met with precluding pupils or surgeons from dissecting the dead body without permission from the treasurer.

In 1703 the grand committee resolved that no surgeon should have more than three "Cubbs," a term altered in 1758 to that of "Dressers." Besides these there were also apprentices to the surgeons of the hospital, and ordinary pupils. The first mention of lectures occurs soon after the appointment of Wm. Cheselden, in 1718. These he at first gave at his own house, but afterwards by permission in the hospital. They were on anatomy and surgery. In 1723 a regular registry was ordered to be kept by the apothecary, of pupils entering to surgical practice. In 1725, Guy's Hospital was opened for the reception of patients. In 1751 the assistant-physician was allowed to take two pupils for his own benefit. In 1768, an additional surgeon, Mr. Joseph Else, was elected to read lectures to the pupils.

The students of Guy's Hospital had by courtesy been allowed to attend the operations, and a similar favour admitted the St. Thomas's men to those at Guy's. But on

the 8th November, 1768, it was formally resolved that the pupils of each hospital have the liberty of attending not only the operations, but surgical practice, and the money to be divided between the six surgeons and two apothecaries. Hence the appellation of the "United Hospital"; an amalgamation never extended beyond the surgical practice.

To Mr. Else is due the foundation of a regular anatomical school. Mr. Cline, who in 1781 was appointed to read lectures conjointly with Mr. Else, was mainly instrumental in bringing it to its greatest celebrity. At Mr. Else's death, Mr. Cline purchased the collection of preparations made by him and Mr. Girle, a former surgeon, which are now in the hospital museum, and became sole lecturer on anatomy. In 1788 he also became surgeon to the hospital. Mr., afterwards Sir Astley, Cooper was apprenticed to Mr. Cline in 1784, and before his election, as one of the surgeons to Guy's Hospital in 1800, was joint lecturer with his teacher on anatomy and surgery. They both added materially to the pathological museum.

In 1812 Mr. Henry Cline was elected surgeon to St. Thomas's Hospital on his father's resignation, and carried on the anatomical lectures conjointly with Astley Cooper. In 1813 a new anatomical theatre and museum were built, the hospital giving £3000 for the purpose, and the two lecturers £1000 each. In 1815 Mr. Benj. Travers, an apprentice of Astley Cooper's at Guy's, was elected surgeon, according to the established rule which gave the vacancy to the senior apprentice of either institution. Mr. Travers joined in the lectures, devoting his attention specially to ophthalmic surgery. In 1820 Mr. Joseph Henry Green was elected surgeon on the death of his cousin Mr. Hy. Cline, having been apprenticed to his uncle Mr. Cline in the year 1809. From 1820 to 1825 he lectured with Astley Cooper. At this period all the branches of medical study,—viz., medicine, chemistry, materia medica, midwifery, botany, and physiology —were lectured on at Guy's Hospital, and no physician of St. Thomas's was allowed to share them.

In 1824 Sir A. Cooper resigned the surgical chair, and Mr. C. Aston Key, his apprentice and nephew by marriage, joined Mr. Green in the office. Mr. Fred Tyrrell, standing in exactly the same relation to Cooper, received permission to lecture on diseases of the eye. In the following year Cooper showed signs of cerebral disturbance, and the family desired that his nephew, Mr. Bransby Cooper, should be his successor. But the claims of Mr. John Flint South were considered superior, and he was appointed. From this cause the "United Hospitals" were severed, and a complete school set up in both. The majority of the students clung to Guy's, where the prestige of the great Sir Astley was still strong; and St. Thomas's school began to sink. The establishment of the Aldersgate Street private school under Tyrrell and Lawrence materially aided in this declension, as did also the secession of Dr. Elliotson to the newly-established University College, and the foundation of a fresh school at King's College, where for a time the surgical lectures were given by Mr. Joseph Henry Green, although a surgeon of St. Thomas's.

Owing to the unprosperous state of affairs in 1842, the Governors came forward to reorganize the school, and the aid of Mr. R. D. Grainger, whose popularity had been established in the Webb Street private school, was obtained. Mr. Joseph H. Green also rejoined the school; and Dr. Marshall Hall, Dr. Hodgkin, Dr. Martin Barry, Dr. Gregory, and Mr. Benjamin Travers contributed to its efficiency. This state of affairs continued until 1858, when the Governors gave back the management, and its attendant risks, into the hands of the lecturers.

For some years it was maintained with difficulty, and at much self-sacrifice on the part of the staff, during what may be termed a transitional period, in the hope, now realized, of its once more developing into an institution worthy of its old traditionary glories.

From its foundation down to the year 1862, the Hospital occupied the original site near London Bridge, but in that year the property was sold for the extension of the railway

accommodation, and the establishment temporarily removed to the Surrey Gardens, where it was carried on till the Summer of 1871. In 1868 the first stone of the new Hospital at Westminster Bridge was laid by the Queen, and the completed building was opened by Her Majesty in 1871. In September the patients were first admitted into the new Hospital, and the Medical School was opened on October the 2nd.

The original Hospital latterly contained 500 beds. The present building contains in all 572 beds. It consists of six blocks appropriated to the reception of patients; with one for the administrative and other offices, and one for the Medical School. The Ward blocks, though connected by corridors, stand apart, so as to afford free exposure in all directions. The Wards, with the exception of four which are placed on the ground floor, occupy the first, second, and third floors. Generally, each Ward affords accommodation for 28 beds, which are placed against the piers between the windows, so as to secure thorough ventilation. In a small Ward annexed to each larger Ward, there are two beds for cases requiring special care or treatment.

Of the whole accommodation of the Hospital, about 180 beds are appropriated to ordinary Medical cases, and 230 to ordinary Surgical cases. There are also special Wards for the reception of diseases peculiar to women; for diseases of the eye; for venereal affections; and for children under six years of age. In one of the blocks, separated from the rest of the establishment, there are Wards for infectious diseases.

The space provided for each bed in the ordinary Wards is upwards of 1,800 cubic feet, and in the block appropriated to infectious diseases, about 2,500 cubic feet.

The Out-patients' Department is extensive and well arranged, and every facility is afforded for the treatment of different forms of Medical and Surgical casualties and diseases.

During the twelve months ending December 31st, 1883, the number of patients admitted into the Hospital amounted

to 4,450. In the same period, 22,374 Out-patients have been treated, and in the Maternity department 2,130 women have been attended at their own homes. Casualties, to the number of 52,919 attendances, were treated during the same period. 807 Children were successfully vaccinated at the Hospital as a Government Station.

The School buildings stand at the southern extremity of the Hospital, from which they are quite isolated. They contain ample accommodation for large classes of students.

The Museum is one of the most important in the metropolis. There is a large Reading Room and Library for the use of the pupils.

In addition to these are the various Lecture Rooms, the Dissecting Rooms, the Laboratories for Practical Physiology and for Practical Chemistry, and the Post-mortem Rooms.

The Committee of the "NIGHTINGALE FUND" have arrangements with the authorities of St. Thomas's for educating Women as Hospital Nurses. On the satisfactory completion of one year's training, they will be required to enter into service as Nurses in the Metropolitan or Provincial Hospitals or Infirmaries. A limited number of gentlewomen can be admitted under special agreements to this course of training, with a view to qualify themselves for superior appointments.

The Regulations as to the admission of Candidates may be obtained by writing to Henry Bonham-Carter, Esq., the Secretary of the Nightingale Fund, 91, Gloucester Terrace, Hyde Park, London, W.

Institutions requiring trained Superintendents or Nurses are requested to apply to the Secretary of the Nightingale Fund, or to Mrs. W. W. Wardroper, the Matron of the Hospital, giving as long previous notice as possible of their requirements.

Women wishing to be trained should, whenever it is possible, make personal application to Mrs. Wardroper, to be entered on the list of Candidates, for admission as vacancies occur.

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AND

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DEAN OF THE SCHOOL.

W. M. Ord, M.D.
7, Brook Street, W.

LECTURES AND DEMONSTRATIONS.

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Clinical Medicine	Dr. BRISTOWE. Dr. STONE. Dr. ORD. Dr. HARLEY.
Do. *Obstetric*	Dr. GERVIS.
Surgery	Mr. SYDNEY JONES. Sir WILLIAM MAC CORMAC.
Clinical Surgery	Mr. SYDNEY JONES. Mr. CROFT. Sir WILLIAM MAC CORMAC. Mr. MASON.
Do. *Special Course* ..	Mr. CROFT.
Descriptive Anatomy	Mr. REID. Mr. ANDERSON.
General Anatomy and Physiology	Dr. JOHN HARLEY.
Practical Physiology	Dr. T. CRANSTOUN CHARLES.
Diseases of the Eye	Mr. NETTLESHIP.
Chemistry and Practical Chemistry ..	Dr. BERNAYS.
Midwifery, and the Diseases of Women and Children	Dr. GERVIS.
Physics and Natural Philosophy ..	Dr. STONE.
Materia Medica, and Therapeutics ..	Dr. STONE.
Forensic Medicine and Toxicology	Mr. CLUTTON, Dr. BERNAYS, and Dr. CORY.
Pathological Anatomy	Dr. PAYNE and Dr. SHARKEY.
Botany	Mr. A. W. BENNETT.
Comparative Anatomy	
Mental Disease	Dr. H. RAYNER.
State Medicine	Dr. A. CARPENTER.

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Practical and Manipulative Surgery	Mr. MASON. Mr. MAC KELLAR.
Demonstrations in Anatomy	Mr. REID, Mr. ANDERSON, Dr. TAYLOR, Mr. BALLANCE. and ASSISTANTS.
Demonstrations in Morbid Anatomy ..	Dr. SHARKEY and Dr. HADDEN.
Demonstrations in Physiology ..	Dr. T. D. ACLAND.
Demonstrations in Practical Physiology	
Diseases of the Eye	Mr. NETTLESHIP.
Diseases of the Skin	Dr. PAYNE.
Diseases of the Throat	Dr. F. SEMON.
Diseases of the Ear	Mr. CLUTTON.
Diseases of the Teeth	Mr. W. G. RANGER. Mr. C. E. TRUMAN.

TIMES OF ATTENDANCE OF THE PHYSICIANS AND SURGEONS IN THE WARDS.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Dr. BRISTOWE	—	2	—	—	2	—
Dr. STONE	2	—	—	2	—	—
Dr. ORD	2	—	—	2	—	—
Dr. HARLEY	—	2	—	—	2	—
Dr. GERVIS	2	—	—	2	—	—
Mr. SYDNEY JONES	—	2	—	—	2	—
Mr. CROFT	2	—	—	2	—	—
Sir WILLIAM MAC CORMAC	2	—	—	2	—	—
Mr. MASON	—	2	—	—	2	—
Mr. NETTLESHIP	9	—	—	9	—	—

TIMES OF ATTENDANCE OF THE ASSISTANT-PHYSICIANS AND ASSISTANT-SURGEONS ON THE OUT-PATIENTS.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Dr. PAYNE	—	12.30	—	—	12.30	—
Dr. SHARKEY	12.30	—	—	12.30	—	—
Dr. GULLIVER	—	—	12.30	—	—	12.30
Dr. CORY (Women and Children)	—	—	1.30	—	—	12.30
Mr. MAC KELLAR	12.30	—	—	12.30	—	—
Mr. CLUTTON	—	12.30	—	—	12.30	—
Mr. ANDERSON	—	—	12.30	—	—	12.30
Mr. PITTS	12.30	12.30	—	—	—	—

TIMES OF ATTENDANCE IN THE OUT-PATIENT SPECIAL DEPARTMENTS. (See p. 21.)

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Mr. NETTLESHIP (Diseases of Eye)	1.30	1.30	1.30	1.30	1.30	—
Dr. PAYNE (Diseases of Skin)	—	—	12.30	—	—	—
Dr. SEMON (Diseases of Throat)	—	1.30	—	—	1.30	—
Mr. CLUTTON (Diseases of Ear)	12.30	—	—	—	—	—
Mr. RANGER / Mr. TRUMAN (Diseases of Teeth)	—	10	—	—	10	—
Dr. CORY (Vaccination)	—	—	11.30	—	—	—

DAYS AND HOURS OF LECTURES AND DEMONSTRATIONS.

WINTER SESSION.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Years of Attendance.
Physics	—	—	—	—	—	12	1st Year.
Chemistry	—	10½	—	10½	10½	—	do.
Descriptive and Surgical Anatomy	9½	9½	9½	9½	9½	—	1st & 2nd.
Anatomical Demonstrations*	10—4	10—4	10—4	10—4	10—4	10—2	do.
Physiology	—	4	4	—	4	—	do.
Physiological Demonstrations	—	—	11.30	—	11.30	—	do.
Practical and Manipulative Surgery	—	—	—	—	—	9	2nd.
Medicine — Oct. 1st to Dec. 31st	4	—	—	4	4	—	3rd.
Medicine — Jan. 1st to Mar. 31st	9	—	—	9	9	—	3rd.
Surgery — Oct. 1st to Dec. 31st	9	—	—	9	9	—	do.
Surgery — Jan. 1st to Mar. 31st	4	—	—	4	4	—	do.
Pathological Anatomy (Practical)	—	—	—	—	—	11½–1½	3rd or 4th.
Diseases of the Eye — Oct. 1st to Dec. 31st	—	5	—	—	5	—	do.
Clinical Surgery (Special Course)	—	9	—	—	—	—	do.
Obstetric Demonstrations	—	—	9	—	—	—	do.

Demonstrations of Morbid Anatomy 2 p.m. daily.

SUMMER SESSION.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Years.
Materia Medica	9	—	9	—	9	—	1st Year.
Botany	—	10	10	—	—	10	do.
Practical Chemistry	10—12	—	—	10—12	10—12	—	do.
Practical Physiology	12.30	12.30	—	—	12.30	—	do.
Midwifery	4	4	—	4	4	—	2nd.
Comparative Anatomy	12	—	—	12	—	—	do.
Forensic Medicine	—	9	—	9	—	9	3rd.
Pathological Anatomy	—	—	9	—	9	—	do.
Do. Demonstration	4	—	—	—	—	—	do.
Practical and Manipulative Surgery	—	4	—	—	4	—	do.
Mental Diseases	—	—	—	—	12	—	do.
State Medicine	—	—	4	—	—	—	do.
Clinical Surgery (Special Course)	9	—	—	—	—	—	do.

Demonstrations of Morbid Anatomy 2 p.m. daily.

The times of delivery of the Clinical Lectures are arranged, in accordance with other work, in the course of the Session.

* The Dissecting Room is open to the Students from 9 a.m. till 5 p.m.

SURGICAL OPERATIONS are performed on Wednesdays and Saturdays at 1.30 p.m., and on other days in cases of emergency.

In-Patients are admitted daily at 11.30 a.m.

Out-Patients are seen by the Assistant-Physicians and Assistant-Surgeons on the days stated in the Table, (see p. 19). *Diseases of Women and Children* are treated, on Wednesdays at 1.30, and Saturdays at 12.30, by Dr. CORY.

Casual Patients are seen by the Resident Assistant-Physician, the Resident Assistant-Surgeon, the House-Surgeons, Assistant House-Surgeons and Dressers at 12 noon.

SPECIAL DEPARTMENTS.

(*For Times of Attendance see Table, page* 19).

Diseases of the Eye.—Operations are performed at 4 p.m. on Tuesdays, and at 2 p.m., on Fridays. Ophthalmoscopic Demonstrations and Clinical Lectures on Diseases of the Eye are given by Mr. NETTLESHIP two or three times a week; and a class for learning the Ophthalmoscope is held each Session.

Diseases of the Skin.—A Course of Lectures is given by Dr. PAYNE in the Winter Session.

Diseases of the Throat.—A short Course of Clinical Lectures is given to senior students by Dr. SEMON during the Winter Session.

Diseases of the Ear. — Instruction is given by Mr. CLUTTON on Mondays at 12.30 p.m.

Diseases of the Teeth.—Mr. RANGER and Mr. TRUMAN give instruction in Dental Surgery on Tuesdays and Fridays at 10 a.m.

Vaccination.—Practical Instruction is given by Dr. CORY once a week.

NOTE.—St. Thomas's Hospital is now recognised as a Local Vaccination Station, and Dr. CORY is authorised to give certificates of instruction in Vaccination according to the requirements of the Local Government Board. Fee One Guinea.

Post-Mortem Examinations by Dr. SHARKEY and Dr. HADDEN, and Pathological Demonstrations, daily at 2 p.m.

Practical Instruction in the Administration of **Anæsthetics** is given by Mr. TYRRELL and Mr. WHITE.

In addition to the Clinical Instruction given in the Wards and the Out-Patients' Rooms by the Medical and Surgical Officers, and the Special Course of Clinical Surgery, Lectures on Clinical Medicine and Surgery are delivered weekly during both the Winter and Summer Sessions by the Physicians and Surgeons to the Hospital.

SUGGESTIONS TO STUDENTS.

All gentlemen who propose to obtain the Licence of the Royal College of Physicians of London, the Diploma of the Royal College of Surgeons of England, or the Licence of the Society of Apothecaries, must, in order to be able to register their attendance upon Hospital practice or lectures, possess the certificate in Arts granted by one of the bodies whose certificates are recognised by the General Medical Council. The Regulations of the Medical Council as to the registration of Medical Students contain particulars of the Preliminary Examinations, and can be had from Spottiswoode & Co., 30, Parliament Street, S.W.

Students wishing to obtain a Medical Degree of the University of London *must* pass the *Matriculation** Examination; no other Preliminary will suffice. *Under the new regulations of the University Students who matriculate after January* 1885, *will be required to pass the Preliminary Scientific Examination before commencing their regular Medical Studies.* For the Preliminary Scientific, and the Intermediate M.B. Examinations, Special Classes are held here (see p. 26).

Students not proposing to seek a degree in the University of London, will always reap much advantage by acquiring, in the Preliminary Scientific Class, the amount of scientific knowledge and training demanded by the University; generally, with respect to the formation of a sound foundation of Medical Study; specially, in that such knowledge is necessary in the competition for the Entrance Science Scholarship.

Students proposing to enter should put themselves, at an early period, in communication with the Medical Secretary, who will be always ready to advise them. It is necessary, when writing to him, to state if any, and, if any, which Preliminary Examination has been passed, and if the name of the Student has been registered at the Medical Council Office.

Students when joining must produce a Certificate of Preliminary Examination or of Registration. It is best to join at the beginning of a Session, Winter or Summer, but it is in the power of a Student to enter at any time which he may find suitable.

Students are not obliged to remain at the Hospital more than three years, provided they have obtained the certificates of attendance upon lectures required by the respective licensing bodies. They must, however, in the event of leaving the Hospital, be engaged during the fourth year in the acquisition of professional knowledge elsewhere, unless they have completed a recognised period of study before coming to the Hospital.

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* *Candidates who pass the Matriculation Examination in January*, 1885, *or previously, will be allowed to date the commencement of their Professional Studies, as heretofore, from that Examination.*—University of London Calendar 1884-5 p. 164, Note.

It is right, however, that Students should be aware that the loss of the fourth year of Hospital Study is strongly to be deprecated, inasmuch as at that period the necessity of attending Lectures having ceased, the whole time can be spent in the study of disease in the wards of the Hospital.

Students, when qualified, are strongly advised to use every effort to obtain the Senior appointments open to them, and especially those of Assistant and full House Physician, House Surgeon, &c. These appointments are accessible to Students of the Hospital without payment, and offer opportunities for obtaining practical professional knowledge, the value of which it is impossible to estimate too highly.

Students are recommended to attend the Lectures, &c., in the following order; and, in accordance with the Regulations of the Qualifying Bodies, are required to show by their answers in the Sessional Examinations, that they have paid proper attention to the Lectures in each Course.

FIRST YEAR.

Winter Session.—Anatomy, Dissections, Physiology, Chemistry.

Summer Session.—Materia Medica, Botany, Practical Physiology, Practical Chemistry.

SECOND YEAR.

Winter Session.—Anatomy, Physiology, Dissections, Practical Surgery, Clinical Medicine and Surgery.

Summer Session.—Midwifery, Comparative Anatomy, Clinical Medicine and Surgery.

N.B.—Students should defer further attendance on Lectures until they shall have passed the Primary Examination of the College of Surgeons.

THIRD YEAR.

Winter Session.—Medicine, Surgery, Clinical Medicine and Surgery.

Summer Session.—Forensic Medicine, Pathological Anatomy, Clinical Medicine and Surgery.

In addition to the above, Students are advised, during their first Winter Session, to attend the Lectures on Physics and Natural Philosophy; in their third or fourth Summer Session, to attend the extra course of Practical and Manipulative Surgery; and the Lectures on Mental Disease, and on State Medicine; and in the third or fourth Winter the Practical Course of Pathological Anatomy, and the Obstetric Demonstrations. The Course on Diseases of the Eye, and the teaching in the Eye Department should be attended in the third and fourth years. All these courses are freely open to Students of the Hospital.

They are also strongly recommended to devote, during the whole period of their attendance at the Hospital, as much time as they can spare from other engagements, to Clinical study in the wards and in the out-patients' rooms.

FEES FOR ATTENDANCE ON THE LECTURES AND ON THE PRACTICE OF THE HOSPITAL.

PERPETUAL TICKETS.

Admitting to Hospital Practice and Lectures for an unlimited period.

The Perpetual Fee to Hospital Practice and Lectures may be paid in several ways:

1st. One Hundred and Twenty-five Pounds paid on entrance;

2nd. One Hundred and Thirty-five pounds in two payments, £75 on entrance, and £60 at the beginning of the next year;

3rd. Payment by three instalments, viz., of £65 at the beginning of the first year, £50 at the beginning of the second year, and £30 at the beginning of the third year.

Gentlemen entering at St. Thomas's in the second* year of their Studentship pay £65 for that year; £25 for the third year; or upon paying £85 on entrance, they will become Perpetual Students. Students entering in their third year pay £40; for the next year £20, or one payment of £55 on entrance will entitle them to be Perpetual Students.

The Fee for attendance on the *general* subjects required of Students in Dental Surgery, is for the two years, £55, or by instalments, £50 for the first year, and £10 for the second year. If certificates for *Dental* practice are also required, the special fee for that subject (page 25) has to be paid.

Regularly qualified Medical Practitioners are admitted to the Hospital practice, and to the Lectures and Library, on payment of a fee of £12. 10*s.* for unlimited attendance; but are not entitled to receive certificates for such attendance without payment for the special certificates required (see p. 25).

All privileges in respect of Hospital attendance are granted subject to the approval of the Governors, and Students must conform to the regulations of the Hospital and Medical School, on which understanding alone cards of attendance are granted.

EXTRA CHARGES.

Students are now supplied with chemicals and materials to work with in the courses of Chemistry and Physiology

* Students who have commenced the study of the Profession otherwise than by attendance at a Medical School, will be considered to be first year's Students on joining the Medical School, as the time previously spent does not count until three years' Lectures have been attended, but a deduction from the Perpetual Fee will be allowed in such cases.

without extra charge, but there are certain instruments and materials required during the course of study, as follows, viz.:

Those attending the Class of Practical Physiology in the summer should provide themselves with Microscopes.

Students Dissecting pay for the parts they dissect at fixed rates, which are notified in the Library.

The Clinical Clerks must provide themselves with a Stethoscope and Registering Clinical Thermometer. The Dressers are required to have a Registering Clinical Thermometer, a Pocket Case of Instruments, and a Case of Silver Catheters.

The fee for Practical Pharmacy is not included in the Perpetual fee, as many Students have learned it before joining a Medical School; but instruction in Pharmacy and Pharmaceutical Manipulation, to meet the requirements of the Royal Colleges of Physicians and Surgeons, and of the Society of Apothecaries, is given in the Dispensary of the Hospital by the Apothecary, Mr. S. PLOWMAN. The fee for this course of instruction is 5 Guineas for three months. Application to be made to the Secretary.

The different Courses of Lectures, or the Hospital Practice, may also be attended separately on the following terms, which entitle to Certificates for such Attendances.

For the Medical and Surgical Practice, including Clinical Lectures and the Special Departments.

Three months	£15	Twelve months	£40
Six ditto	£26	Perpetual	£55
Nine ditto	£35		

Dental Practice, 1 year 2 Gs., Perpetual 3 Gs.

Midwifery Practice, 5 Gs. Ophthalmic Practice, 2 Gs.

For Lectures and Demonstrations.	1 *Course.*	*Perpetual.*
Medicine, Surgery, Physiology, Anatomy, Chemistry each	7 Gs.	..10 Gs.
Midwifery	5 „	.. 6 „
Materia Medica, Botany, Physics, Forensic Medicine, General Pathology, and Comparative Anaty. each	4 „	.. 5 „
Mental Diseases, Ophthalmic Surgery, State Medicine each	2 „	.. 3 „
* Practical Chemistry, Practical Surgery, Practical Physiology, Pathological Anatomy, including the Practical Course .. .. each	6 „	—

Dissections, three months 4 Gs., six months 6 Gs., Perpetual 10 Gs.

Operative Surgery—A voluntary class will be formed by Messrs. MACKELLAR and CLUTTON during the Summer, and at other convenient times, for Gentlemen who wish to prepare for the Fellowship or other Examinations. This course will not include Operations on the Eye-ball. Fee, £5 5*s.*

Operative Surgery of the Eye.—A voluntary class will be formed by Mr. NETTLESHIP during the Summer. Fee, £2 2*s.*

Diseases of the Skin.—The Lectures on this subject are open to Gentlemen, not Students of the Hospital, by special arrangement.

Laryngology.—A special course is given by Dr. SEMON during the Winter Session. Fee for Gentlemen, not Students of the Hospital, 3 Gs.

Special Courses of Obstetric Demonstrations are given by Dr. CORY throughout the year. Fee, £3 3*s.*

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* These amounts do not include the extra charges in the Practical Courses for Materials Instruments, &c.

UNIVERSITY OF LONDON.

PRELIMINARY SCIENTIFIC AND INTERMEDIATE M.B. CLASSES.

PRELIMINARY SCIENTIFIC EXAMINATION.

Special Classes in the subjects required for the Preliminary Scientific Examination at the University of London, will be held from October to July, and will include all the subjects required as follows:

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Botany. A. W. BENNETT, M.A.	—	—	11	—	—	—
Chemistry, Inorganic } Dr. BERNAYS	Winter 11.30		—	—	—	—
„ Practical } Dr. BERNAYS	Summer 11		—	—	11.30	—
	—	—	—	Winter 11.30		—
Physics. W. H. STONE, M.A., M.B..	—	—	—	—	Jan to July 3	Oct to Mar 12
				Winter		Summer
Zoology.	—	—	—	11.30	—	11

The Fee charged to Students of the Hospital for instruction in the above is* .. .. *Six Guineas.*
To others, inclusive of Practical Chemistry and Chemicals .. .. *Twelve Guineas.*
Fee for any single subject .. .. *Three Guineas.*
Subsequent Courses, half Fee.

* Instruction in Practical Chemistry is necessary for this Examination. This, so far as Students of the Hospital are concerned, is held to be given in the course of Practical Chemistry attended by all Students in their first Summer, the requirements of the University being specially regarded in this Course, but Students requiring a Second Course of Practical Chemistry, are charged .. .. *A Guinea and a-half for Chemicals.*

INTERMEDIATE EXAMINATION IN MEDICINE.

Special Classes in the subjects required for this Examination are held by the different Lecturers on those Subjects, from January to July.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Anatomy. R. W. REID, C.M.	—	—	—	11	—	—
Materia Medica. W. H. STONE, M.B. and Pharmaceutical Chemistry. } S. PLOWMAN, M.R.C.S.	—	—	2.30	—	—	—
	—	2.30	—	—	—	—
Organic Chemistry } Dr. BERNAYS...	—	—	11	—	—	—
Organic Analysis } Dr. BERNAYS...	—	—	—	—	—	10
Physiology.	11.30	—	—	—	—	—

Fee to Students of the Hospital inclusive of Organic Analysis and Chemicals*	*Nine Guineas.*
To others ditto	*Twelve Guineas.*
Fee for any Single Subject	*Three Guineas.*

Subsequent Courses, half Fee (except Chemicals, for which full fee is charged).

* Instruction and Practice in Organic Analysis is essential for this Examination.

N.B.—Private Classes are held for the Final M.B. Examination.

SCHOLARSHIPS, PRIZES, APPOINTMENTS, AND HONORARY DISTINCTIONS.

OPEN SCHOLARSHIPS IN NATURAL SCIENCE.

As an inducement to the study of Natural Science before the commencement of the strictly Medical Course, two Scholarships, of the value of £100 and £60 respectively, are awarded annually, after an examination in Physics, Chemistry, and either Botany or Zoology, at the option of Candidates. The Examinations for these Scholarships will be held on October 6th, 7th, and 8th, 1884, the subjects being the same as those for honours in the Preliminary Scientific Examination of the London University, viz.: Botany, Zoology, Inorganic Chemistry (including Practical Chemistry), and Physics or Natural Philosophy. These Scholarships are open to all Students who have passed a recognised Preliminary Examination in Arts, and have not yet attended Lectures on Anatomy and Physiology of the first year, without any condition as to their becoming Students of the Hospital, except in the case of successful Candidates, who must enter at once as Perpetual Pupils. Chemistry and Physics are compulsory subjects for this Examination, and Candidates must take up one of the other subjects at their option. The Examination will be conducted by means of written papers and practical work. The names of Competitors with Certificate of Preliminary Examination must be sent to the Secretary not later than September 30th.

THE WILLIAM TITE SCHOLARSHIP.

This Scholarship, founded by the late Sir W. Tite, C.B., M.P., F.R.S., and endowed with £1,000 Consols, producing £30 per Annum, is awarded each year to the Student placed highest in the 1st Class List in the examinations at the end of the first Winter Session. Preference, in case of equality between Students, is to be given to the son of a medical man, and more particularly of one who has been educated at St. Thomas's Hospital or is in Practice in Bath.

THE MUSGROVE SCHOLARSHIP.

This Scholarship, founded by Sir John Musgrove, Bart., the late President of the Hospital, and endowed with £1,400 Consols, producing 40 Guineas per Annum, is awarded biennially to the Student who shall take the highest place in the 1st Class List in the examinations at the end of the Second Winter Session. It is tenable for two years, provided the holder obtains a place in the 1st Class in the Examinations at the end of the third winter.

THE PEACOCK SCHOLARSHIP.

This Scholarship, founded by the will of the late Dr. Thomas Bevill Peacock, for many years Physician, and at the time of his death Consulting Physician, to St. Thomas's Hospital, is of the same value as the Musgrove Scholarship, is awarded and held upon the same terms; and is given every second year in alternation with that Scholarship.

Gentlemen obtaining these Scholarships are not precluded from receiving any of the Prizes awarded at the subsequent periodical examinations.

PRIZES.

The following Scholarships, Prizes, and Medals, will be offered for Competition during the year 1884–1885:—

TWO OPEN SCHOLARSHIPS IN NATURAL SCIENCE of the value of £100 and £60 respectively, at Entrance.

AT THE END OF FIRST YEAR.

Winter.

1st. ..	The William Tite Scholarship	£30.
2nd. ..	College Prize	£20.
3rd. ..	Ditto	£10.

Summer.

1st. ..	College Prize	£15.
2nd. ..	Ditto	£10.

SECOND YEAR.

Winter.

1st. ..	The Musgrove Scholarship	£42.
2nd. ..	College Prize	£20.
3rd. ..	Ditto	£10.

Summer.

1st. ..	College Prize	£15.
2nd. ..	Ditto	£10.

THIRD YEAR.

Winter.

	Second Tenure of The Peacock Scholarship (if holder obtains 1st Class) in this examination	£42.
1st. ..	College Prize	£20.
2nd. ..	Ditto	£15.
3rd. ..	Ditto	£10.

Summer.

1st. ..	College Prize	£15.
2nd. ..	Ditto	£10.

Students of each year are classed according to their respective merits in the examinations, and those in the *first* class in each year receive Certificates of Honour, and a preference in the selection for Hospital Appointments.

In addition there are awarded—

THE CHESELDEN MEDAL, *Annually.*
THE MEAD MEDAL, *do.*
THE SOLLY MEDAL AND PRIZE, *Biennially.*
THE GRAINGER TESTIMONIAL PRIZE, *do.*
THE TREASURER'S GOLD MEDAL, *Annually.*

The CHESELDEN MEDAL, founded by the late GEORGE VAUGHAN, Esq., is annually awarded to the Fourth Year's Student who most distinguishes himself in respect of a Special Practical Examination in Surgery and Surgical Anatomy.

The MEAD MEDAL, founded by Mr. and Mrs. NEWMAN SMITH, is awarded annually, to a Fourth Year's Student, in respect of a Special Practical Examination in Medicine, Pathology and Hygiene.

Competitors for either of these Medals must have been Students of St. Thomas's for at least two out of the four Winter Sessions.

The SOLLY MEDAL, together with a Prize in Money, will be awarded biennially. Those Students are eligible to compete who shall be of from three to six years' standing. The award is made for the best series of Reports of Surgical cases coming under the Students' personal observation in the Wards, not, however, to exceed ten in number. Preference is given, merit in other respects being equal, to Reports illustrated by the author's drawings, and short Clinical Remarks must accompany each Report. The next award will be made at the end of 1885–86, papers to be sent in before April 1st, 1886.

The GRAINGER TESTIMONIAL PRIZE, of the value of Twenty Pounds, is awarded biennially to Students who shall be of from three to six years' standing, for the best Physiological Essay, to be illustrated by preparations and dissections. Competitors for this Prize must be Medical Students of St. Thomas's Hospital, and on the day of sending in their Essays, Dissections, and Preparations, shall have completed the Second, and not more than the sixth year of their medical studies. The next award will be made in 1886, papers to be sent in before October 1st, 1886.

The TREASURER'S GOLD MEDAL for General Proficiency and Good Conduct, is awarded at the end of the 4th Winter Session to the Student who has passed through his pupilage in St. Thomas's Hospital in the most meritorious manner.

APPOINTMENTS.

TWO RESIDENT and one NON-RESIDENT HOUSE PHYSICIANS, and an ASSISTANT HOUSE PHYSICIAN, TWO HOUSE SURGEONS, an ASSISTANT HOUSE SURGEON, and a RESIDENT ACCOUCHEUR, are selected every three months from Gentlemen who have obtained their professional diplomas; they hold office for three or six months. One House Physician, the Assistant House Physician, and the Assistant House Surgeon, are non-resident, but the other Officers, together with the Dressers and Obstetric Clerks, are provided with Rooms and Commons during their period of attendance in the Hospital, free of expense.

AN OPHTHALMIC CLINICAL ASSISTANT, chosen from Qualified Students who have worked satisfactorily in the Ophthalmic Department, is appointed for six months with a Salary at the rate of £50 per annum, with board but not residence; the appointment is renewable for a limited period.

CLINICAL ASSISTANTS in the Special Departments for Diseases of the Skin, Throat, and Ear, are appointed every three months.

CLINICAL CLERKS, and DRESSERS, to In-Patients are selected to the number of at least 100 each year. They are chosen from amongst the most eligible pupils. CLINICAL CLERKS, and DRESSERS, for the Out-Patients are also appointed to the number of at least 80 to 100 each year.

ALL STUDENTS have the opportunity afforded them of being engaged in the performance of practical duties in connection with the Medical, Surgical, Obstetrical, Ophthalmic, and Pathological Departments of the Hospital.

TWO HOSPITAL REGISTRARS, at an annual Salary of £100 each, are appointed in each year. Preference will be given to Gentlemen who have been distinguished for merit, and have completed their studies in the School. The payment of the Registrars is subject to the presentation of a Report upon the Practice of the Hospital, and to such Report being regarded as satisfactory by the Medical Officers to whom it shall have been referred.

TWO OR MORE STUDENTS are selected from those who have completed their Second Winter Session, to act as Assistants in the Physiological Laboratory. They receive Certificates of Honour according to merit.

TWO OR MORE STUDENTS are selected from those who have completed their Second Winter Session, to act as Assistants in the Dissecting Room. They receive Certificates of Honour according to merit.

PROSECTORS are appointed in the early part of the Winter Session, and Prizes are awarded to the best Dissectors at the termination of the Session.

STUDENTS are likewise appointed to act as Assistants to the Demonstrators of Pathological Anatomy in the Post-mortem Room.

OBSTETRIC CLERKS, who reside and have Commons in the Hospital, are appointed in rotation. Each holds office for a fortnight, and Certificates of Honour are awarded to those Gentlemen who have satisfactorily attended Sixty Maternity cases.

Students have access, with the permission of the Officers under whose superintendence they are placed, to the Museums of Human and Comparative Anatomy and Pathology—of Materia Medica—of Botany— and of Chemistry and Mineralogy—and to the Laboratories of Practical Physiology and Practical Chemistry; also to the Library, which contains a large collection of works of reference and modern text-books.

REGULATIONS FOR THE EXAMINATION AND CLASSIFICATION OF THE STUDENTS.

1. In accordance with the Regulations of the Qualifying Bodies, Students will be required to attend the Class Examinations in the subjects for which they have to be certified, and show by their answers to the questions that they have paid proper attention to the Lectures, otherwise their Schedules cannot be signed.

2. There shall be held at least two Examinations in each Winter and one in each Summer Session in each subject on which attendance is required during that Session, and the marks obtained in these Examinations shall be the basis for the Classification of Students and the Award of Prizes for each Session respectively. Provided that any extra Examination in the course of the Session, in any subject, be not allowed to interfere with the ordinary Lectures in other subjects.

3. The number of marks allotted to each subject in the following Schedule is not to be exceeded in case the number of Examinations held during the Session be more than two, but must be distributed amongst the several Examinations.

1st YEAR'S SUBJECTS.		
WINTER	Anatomy	600
	Practical Anatomy	200
	Physiology	600
	Chemistry	600
	Total	2000
SUMMER	Practical Chemistry	300
	Materia Medica	300
	Botany	150
	Practical Physiology	300
	Total	1050
2nd YEAR'S SUBJECTS.		
WINTER	Anatomy	600
	Practical Anatomy	200
	Physiology	600
	Practical Surgery	200
	Total	1600
SUMMER	Midwifery	500
	Comparative Anatomy	100
	Total	600
3rd YEAR'S SUBJECTS.		
WINTER	Medicine	650
	Surgery	650
	Total	1300
SUMMER	Forensic Medicine	250
	Pathological Anatomy	350
	Total	600

4. All Students who have obtained at least one-third of the total number of marks in each subject, and not less than two-thirds of the total number allotted to all the subjects collectively, shall be placed in the 1st Class.

Those who have obtained one-third of the total number of marks allotted to all the subjects collectively shall be placed in the 2nd Class.

The names of those who do not obtain either a 1st or 2nd Class position will not be published, but a General List showing the exact position of each Student at every Examination shall be kept by the Secretary, from whom any Student can learn his own position, but no Lecturer shall make known to Students the number of marks obtained by any Student in any subject.

5. The Prizes shall be awarded to the Students holding the 1st, 2nd, and 3rd positions in the 1st Class of each Winter Session, and to those holding the 1st and 2nd positions of the 1st Class in each Summer Session.

6. The number of marks allotted to the Examinations for the MEAD and CHESELDEN Medals shall be 600 each.

7. In awarding the TREASURER'S Medal the number of marks obtained at the Sessional Examinations and in the MEAD and CHESELDEN Examinations shall be counted, provided that, as regards the Examination for the Medals, two-thirds of the maximum marks be obtained, but those obtained in the Entrance Scholarship Competition shall not be included.

8. The Authorities reserve the right of withholding any Prize, if no competitor of sufficient merit presents himself.

Distribution of Prizes for the Past Sessions.

SUMMER SESSION, 1883.

FIRST YEAR'S STUDENTS.

H. J. SMYTH, *West Hampstead*	College Prize, £15, and Certificate of Honour.
S. B. COOK, *Cape of Good Hope*...	College Prize, £10, and Certificate of Honour.
H. J. MACEVOY, *London*	Certificate of Honour.
S. W. WHEATON, *Battersea Park*	Certificate of Honour.
H. A. SANSOM, *Harley Street*	Certificate of Honour.

SECOND YEAR'S STUDENTS.

E. S. GOODDY, *Hampstead*	College Prize, £15, and Certificate of Honour.
A. E. GODFREY, *Northampton*	College Prize, £10, and Certificate of Honour
K. TOTSUKA, *Tokio, Japan*	Certificate of Honour.

THIRD YEAR'S STUDENTS.

H. W. G. MACKENZIE, *Edinburgh*	College Prize, £15, and Certificate of Honour.
R. T. CANN, *Plymouth*	College Prize, £10, and Certificate of Honour.
J. R. STADDON, *Ipswich*	Certificate of Honour.
E. D. RITCHIE, *Wimbledon Park*	Certificate of Honour.
R. LAWSON, *St. Andrews, N.B.*...	Certificate of Honour.
F. C. H. PIGGOTT, *Richmond*	Certificate of Honour.
G. F. C. WILLIAMS, *Brixton*	Certificate of Honour.

WINTER SESSION, 1883-84.

ENTRANCE SCIENCE SCHOLARSHIPS.

C. W. COOKE, *Regent's Park*	Scholarship, £100, and Certificate of Honour.
F. FAWSSETT, *Surbiton*...	Scholarship, £60, and Certificate of Honour.

FIRST YEAR'S STUDENTS.

F. Fawssett, *Surbiton*... ... ... — The Wm. Tite Scholarship, £30, and Certificate of Honour.

E. Webster, *Lee*... ... ... — College Prize, £20, and Certificate of Honour.

H. H. Heffernan, *Southsea* ... ... — College Prize, £10, and Certificate of Honour.

C. H. Eccles, *Brigg* ... ... — Certificate of Honour.

R. V. Solly, *Congleton*... ... ... — Certificate of Honour.

W. W. Ord, *Brook Street* ... ... — Certificate of Honour.

C. W. Cooke, *Regent's Park* ... ... — Certificate of Honour.

SECOND YEAR'S STUDENTS.

H. P. Hawkins, *Hawkhurst* ... ... — The Peacock Scholarship, 40 Gs. and Certificate of Honour.

H. J. Smyth, *West Hampstead*... ... ... — College Prize, £20, and Certificate of Honour.

E. Solly, *Congleton* ... ... — College Prize, £10, and Certificate of Honour.

H. Duncan, *London* ... ... — Certificate of Honour.

E. C. Stabb, *Ilfracombe* ... ... — Certificate of Honour.

E. H. Wright, *Jersey* ... ... — Certificate of Honour.

S. W. Wheaton, *Battersea Park*.. ... ... — Certificate of Honour.

S. B. Cook, *Cape of Good Hope* ... ... — Certificate of Honour.

J. H. Tonking, *Camborne* ... ... — Certificate of Honour.

H. P. Helsham, *Brixton* ... ... — Certificate of Honour.

T. E. Stuart, *Maldon* ... ... — Certificate of Honour.

W. F. Brook, *Fareham*... ... ... — Certificate of Honour.

L. A. Bidwell, *Blackheath*... ... ... — Certificate of Honour.

H. A. Sansom, *Harley Street* ... ... — Certificate of Honour.

J. T. Calvert, *Rochdale* ... ... — Certificate of Honour.

C. T. Quiller, *Clapham* ... ... — Certificate of Honour.

THIRD YEAR'S STUDENTS.

S. H. Jones, *Hanover Square* ... ... — 2nd Tenure of half the Musgrove Scholarship, 20 Gs. with College Prize, £20, and Certificate of Honour.

A. E. Godfrey, *Northampton* ... ... — College Prize, £15, and Certificate of Honour.

K. Totsuka, *Tokio, Japan* ... ... — College Prize, £10, and Certificate of Honour, with 2nd Tenure of half the Musgrove Scholarship, 20 Gs.

J. S. Hutton, *Forest Hill*... ... ... — Certificate of Honour.

H. C. Kidd, *Westbourne Park* ... ... — Certificate of Honour.

A. A. Brockat, *Denmark Hill* ... ... — Certificate of Honour.

F. D. Crowdy, *Bath* ... ... — Certificate of Honour.

ANATOMICAL ASSISTANTS.

A. E. Godfrey, *Northampton* ... ... — Certificate of Honour.

G. A. Macdonald, *Hull* ... ... — Certificate of Honour.

F. G. Parsons, *Lee* ... ... — Certificate of Honour.

K. Totsuka, *Tokio, Japan* ... ... — Certificate of Honour.

PROSECTORS.

H. Duncan, *London*... ... ... — Prize and Certificate of Honour.

E. C. Stabb, *Ilfracombe* ... ... — Prize and Certificate of Honour.

L. A. Bidwell, *Blackheath* ... ... — Certificate of Honour.

A. B. Brockway, *Walthamstow* ... ... — Certificate of Honour.

W. F. Brook, *Fareham* ... ... — Certificate of Honour.

H. P. Hawkins, *Hawkhurst* ... ... — Certificate of Honour.

SOLLY MEDAL AND PRIZE.

J. Pietersen ... ... **Medal and Prize, £25.**

PRACTICAL MEDICINE.

H. W. G. Mackenzie ... ... { **The Mead Medal,** founded by Mr. & Mrs. Newman Smith.

H. Bidwell ... ... { Special Mention and Certificate of Honour.

SURGERY AND SURGICAL ANATOMY.

R. Lawson ... ... { **The Cheselden Medal,** founded by the late George Vaughan, Esq.

R. Lake ... ... { Special Mention and Certificate of Honour.

RESIDENT ACCOUCHEURS.

F. F. Caiger ... ... Certificate of Honour.
W. Fell ... ... Certificate of Honour.
W. J. Sheppard ... ... Certificate of Honour.
W. Wansbrough Jones ... ... Certificate of Honour.

HOUSE PHYSICIANS.

A. Foxwell ... ... Certificate of Honour.
H. Milton ... ... Certificate of Honour.
C. D. Green .. .. Certificate of Honour.
W. Hull ... ... Certificate of Honour.
W. J. Sheppard } Non-Resident { ... ... Certificate of Honour.
J. Orford ... } { ... ... Certificate of Honour.

ASSISTANT HOUSE PHYSICIANS.

W Hull... ... ... Certificate of Honour.
F. F. Caiger ... ... Certificate of Honour.
C. D. Green ... ... Certificate of Honour.
W. B. Tomson ... ... Certificate of Honour.

HOUSE SURGEONS.

W. Wansbrough Jones ... ... Certificate of Honour.
G. F. Cooper ... ... Certificate of Honour.
F. F. Caiger ... ... Certificate of Honour.
G. D. Johnston ... ... Certificate of Honour.

ASSISTANT HOUSE SURGEONS.

W. Wansbrough Jones ... ... Certificate of Honour.
G. D. Johnston ... ... Certificate of Honour.
F. F. Caiger... ... ... Certificate of Honour.
W. J. Sheppard ... ... Certificate of Honour.

FOR GENERAL PROFICIENCY AND GOOD CONDUCT.

R. Lawson ... ... { The Treasurer's Gold Medal.

The following Distinctions have been obtained by Students of St. Thomas's Hospital during the past year:—

The Gold Medal in Surgery at the B.S. Examination of the London University, by Mr. F. F. Caiger.

Qualified for the Gold Medal, at the M.D. Examination of the University of London, Mr. A. E. Wells.

A Shuttleworth Scholarship (Caius College, Cambridge) for proficiency in Botany and Comparative Anatomy, by Mr. C. S. Sherrington.

The Surgical Scholarship of the Society of Apothecaries, by Mr. S. Plowman. The Second Place having been taken by Mr. H. B. Robinson.

THE MUSEUM OF HUMAN AND COMPARATIVE ANATOMY AND PATHOLOGY.

Curator.—

Among the earliest contributors to this Museum were Mr. CLINE, Sir A. COOPER, Mr. TRAVERS, and Mr. TYRRELL.

The Printed Catalogue of the Museum consists of three octavo volumes: in the first volume, edited by Mr. JOHN F. SOUTH, are described the preparations of Healthy Human, Microscopical, and Comparative Anatomy; and the 2nd and 3rd volumes, edited by Mr. SYDNEY JONES, contain descriptions of the specimens illustrative of Pathological Anatomy.

The COLLECTION of HUMAN ANATOMY consists of a Physiological and a Pathological Department: the former contains, besides wax models and casts, a large number of dissected Preparations, illustrating the Organs of Locomotion and Sense; the Nervous System; the Digestive, Respiratory, and Urinary Apparatus; the Vascular System, the Organs of Reproduction, and the tissues.

The Pathological Division is very rich, containing above 3000 Specimens, arranged in thirty-seven Sections, as follows:

SECT.
A. Injuries of Bone: Fractures.
B. Injuries of Joints: Dislocations.
C. Diseases of Bone.
D. Diseases of Joints.
E. Diseases of the Spinal Column.
F. Injuries and Diseases of the Muscular System.
G. Injuries and Diseases of the Eye.
H. Injuries and Diseases of the Ear.
I. Injuries and Diseases of the Nose, Antrum, &c.
K. Injuries and Diseases of the Skin and Subcutaneous Cellular Tissue.
L. Injuries of the Skull.
M. Injuries of the Spine.
N. Injuries and Diseases of the Nervous System.
O. Injuries and Diseases of Mouth, Fauces, Pharynx, and the Œsophagus.
P. Injuries and Diseases of the Stomach.
Q. Injuries and Diseases of the Intestines and Peritoneum.
R. Intussusception, Internal Strangulation, and Hernia.
S. Injuries and Diseases of the Liver.
T. Diseases of the Pancreas and Salivary Glands.
U. Injuries and Diseases of the Spleen.
V. Diseases of Thyroid, Thymus, and Suprarenal Capsules.

SECT.
W. Injuries and Diseases of the Respiratory Apparatus.
X. Injuries and Diseases of the Heart and Pericardium.
Y. Injuries and Diseases of Arteries and Veins.
Z. Diseases of Lymphatic and Lacteal Vessels and Glands.
AA. Injuries and Diseases of the Kidneys, and Ureters.
BB. Injuries and Diseases of the Bladder.
CC. Diseases of the Prostrate Gland and Vesiculæ Seminales, Urinary and Prostratic Calculi.
DD. Injuries and Diseases of the Penis and Uretbra.
EE. Injuries and Diseases of the Testicles and Scrotum.
FF. Diseases of the Ovaries and Fallopian Tubes.
GG. Injuries and Diseases of the Uterus, Vagina, and external organs.
HH. Diseases and displacements of the Ovum.
II. Diseases of the Breast.
KK. Tumours and other allied Morbid Growths.
LL. Malformations.
MM. Wax Models and Casts.

BONES, JOINTS, &c.—Amongst the specimens illustrating Injuries of Bones and Joints, are nearly all those described and figured in Sir A. Cooper's Treatise on 'Dislocations and Fractures of the Joints,' and in Cooper's and Travers's 'Surgical Essays.'

This section has been recently much enriched by numerous specimens of gunshot injuries, presented by Sir William Mac Cormac, chiefly fractures from bullet and shell wounds obtained from cases under his treatment during the Franco-German War.

Sir A. Cooper's preparations, illustrating repair after fracture, are contained in this Section.

Eye.—This Section has been arranged by Mr. Dixon, and contains specimens described and figured by Sir A. Cooper, Mr. Travers, and Mr. Saunders.

Skin.—Several Tumours are contained in this Section, as well as, amongst others, that horny growth, ten inches in length, removed from a man's forehead by Sir A. Cooper.

Head, Spine, Nervous System.—Showing all kinds of Injuries to the Skull; Spinal Injuries, which have been subjected to operation by Cline, Tyrrell, and South, as well as every variety, frequent and rare, of disease of the Nervous System.

Intestines and Peritoneum.—Travers's Preparations, illustrating 'The Process of Nature in repairing Injuries of the Intestines,' are contained in this Section. There are also Specimens illustrating the Morbid Anatomy of Fever, &c.

Hernia.—This Section contains nearly all the Preparations figured and described in 'Cooper's Hernia.' Besides the more common varieties of Hernia, there are Specimens of Mesenteric, Mesocolic, Vesical, Thyroideal, Ischiatic, Perineal, and Phrenic Hernia.

Liver.—Besides every variety of Liver Disease, this Section contains a large number of Biliary Calculi.

Respiratory and Vascular Systems.—Amongst these Preparations are two Specimens, showing ligature of the Abdominal Aorta; one of them the case of Sir A. Cooper; the other that of Mr. John F. South. There are also Specimens of spontaneous obliteration of the Aorta.

The Preparations illustrative of Travers's experiments on Arteries and Veins are in the collection.

There are also very interesting Specimens of Diseased Heart, described by Dr. Wells and Dr. Elliotson.

Kidneys.—Described and arranged by Mr. Simon.

Urinary Calculi.—250 in number—analysed by Mr. Heisch and Dr. Bernays.

Testes.—Most of the preparations figured in Sir A. Cooper's work 'On the Testis,' are contained in this Section.

Malformations.—This Section contains Specimens of Spina Bifida, Acephalous and double monsters, Ectopia Cordis, Malformations of the Heart, Urinary, and Generative Organs. Most of them have been elaborately described by Mr. R. D. Grainger, and the malformations of the heart are referred to by Dr. Farre and Dr. Peacock in their works. There are also very interesting specimens of malformation described by Dr. Bristowe, Mr. Le Gros Clark, and Mr. Sydney Jones.

The Museum contains a considerable number of valuable Ethnological Specimens.

The Museum of Comparative Anatomy contains about 1,000 Preparations, some of them very rare and valuable.

A large number of these Specimens were made by Sir A. Cooper, to illustrate his Lectures, when Professor of Comparative Anatomy to the Royal College of Surgeons.

The Cabinets of Microscopical Anatomy, which are under the charge of the Demonstrator of Practical Physiology, contain upwards of 2,000 injected and other Specimens of normal and morbid Histology, parasites, urinary deposits, &c. These include the Preparations made by Mr. Rainey, to illustrate the Histological Course of Lectures; and others described by him in Papers published in the Philosophical, Medico-Chirurgical, and Microscopical Transactions, and in various scientific works. The specimens are available for use by students who wish to examine them, subject to such regulations as may be deemed necessary.

The Materia Medica Museum contains at least 600 specimens, arranged and labelled according to the British Pharmacopœia of 1867, and is now under the superintendence of Dr. Stone.

The Museum of Chemistry and Mineralogy is under the Superintendence of Dr. Bernays, who founded the Museum and presented the larger part of the Specimens contained in it.

St. Thomas's Hospital.

MEDICAL AND PHYSICAL SOCIETY.

Hon. President, 1884–85.

H. H. Clutton, Esq.

Vice-Presidents.

The Physicians.
The Assist.-Physicians.
C. Stewart, Esq.
Dr. Bernays.
Dr. Rayner.
Dr. Cranstoun Charles.
The Surgeons.
The Assist.-Surgeons.
Dr. A. Carpenter.
R. W. Reid, Esq.
Dr. Kilner.
C. E. Truman, Esq.
W. Edmunds, Esq.

Hon. Secretaries.

C. S. Sherrington. E. Solly.

Committee.

T. D. Acland, M.D.
W. Wansbrough Jones, M.B.
R. Lawson.
H. P. Hawkins.
F. A. Floyer, M.B.
S. Plowman.
W. H. C. Staveley.
F. Fawssett.

This Society was originated in the early part of the present century by students of the Hospital, and has for its object the reading and discussion of papers on Medicine, Surgery, and subjects of General Interest, the narration of cases, and the exhibition of specimens of Physiological and Pathological interest. The Meetings are held in the Library on alternate Thursdays at 8 p.m., and terminate not later than 10 p.m.

The annual soirée is held in December, in the Grand Entrance Hall and Corridor of the Hospital, to which past and present students are invited.

Further information can be obtained of the Hon. Secretaries.

ST. THOMAS'S HOSPITAL REPORTS.

VOL. XIII., NEW SERIES,

EDITED BY

F. MASON, F.R.C.S., AND SEYMOUR J. SHARKEY, M.A., M.B. OXON.,

Will be Published immediately.

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OCTOBER, 1884.

1	W	Introductory Address, 3 P.M. Annual Dinner.
2	TH	
3	F	
4	S	
5	☩	Seventeenth Sunday after Trinity.
6	M	Entrance Scholarships Exam., 6th, 7th, & 8th.
7	TU	Clinical Clerks and Dressers commence duty.
8	W	
9	TH	
10	F	
11	S	
12	☩	Eighteenth Sunday after Trinity.
13	M	
14	TU	
15	W	
16	TH	
17	F	[Lond.
18	S	St. Luke. Last day for Certs. for M.B. Exam., Univ.
19	☩	Nineteenth Sunday after Trinity.
20	M	
21	TU	
22	W	
23	TH	
24	F	
25	S	
26	☩	Twentieth Sunday after Trinity.
27	M	
28	TU	St. Simon and St. Jude.
29	W	
30	TH	
31	F	

The Hospital Entrance Science Scholarships Examination takes place during this month.

The Registration and Museum Committees meet during this month.

The Examinations of the Society of Apothecaries are held every Wednesday and Thursday.

NOVEMBER, 1884.

1	S	All Saints.
2	✠	Twenty-first Sunday after Trinity.
3	M	Univ. Lond. M.B. Exam.
4	Tu	
5	W	Last day for applications for House offices, &c.*
6	Th	
7	F	
8	S	
9	✠	Twenty-second Sun. a. Trin. Prince of Wales b., 1841.
10	M	[and Surgical Registrarships.
11	Tu	*Notice*— 29th, last day for applications for Medical
12	W	Meeting to appoint House Officers, &c.
13	Th	
14	F	
15	S	
16	✠	Twenty-third Sunday after Trinity.
17	M	
18	Tu	Univ. Lond. M.B. Pass list published.
19	W	Univ. Lond. M.B. Honours Exam.
20	Th	
21	F	
22	S	
23	✠	Twenty-fourth Sunday after Trinity.
24	M	
25	Tu	
26	W	
27	Th	
28	F	[Registrarships.
29	S	Last day for applications for Medical and Surgical
30	✠	Advent Sunday. Saint Andrew.

Royal College of Surgeons' Primary and Pass Examinations during this Month.

** Applications for these appointments to be made to the Medical Secretary, by letter, stating the Candidate's qualifications, the offices which he has previously held in the Hospital, and the number of Maternity Cases attended.*

DECEMBER, 1884.

1	M	Univ. Lond. M.D. and M.S. Exam. [S. Exam.
2	Tu	House Officers, &c., commence duty. Univ. Lond. B.
3	W	Last day for applications for Clinical Clerkships and
4	Th	[Dresserships.
5	F	
6	S	
7	✠	Second Sunday in Advent.
8	M	
9	Tu	
10	W	Meeting to appoint Clinical Clerks and Dressers.
11	Th	
12	F	Univ. Lond. M.D. List published.
13	S	
14	✠	Third Sunday in Advent.
15	M	
16	Tu	
17	W	1st Sessional Examination commences.
18	Th	
19	F	
20	S	
21	✠	Fourth Sunday in Advent. Saint Thomas.
22	M	
23	Tu	
24	W	
25	Th	Christmas Day.
26	F	Saint Stephen.
27	S	Last day for Certs. for Matric. Univ. Lond. St. John.
28	✠	First Sunday after Christmas. Holy Innocents.
29	M	
30	Tu	
31	W	

JANUARY, 1885.

1	Th	Circumcision.
2	F	
3	S	
4	☉	Second Sunday after Christmas.
5	M	
6	Tu	Epiphany. Clinical Clerks and Dressers commence duty
7	W	
8	Th	
9	F	
10	S	
11	☉	First Sunday after Epiphany.
12	M	Univ. Lond. Matriculation Examination.
13	Tu	
14	W	
15	Th	
16	F	
17	S	
18	☉	Second Sunday after Epiphany.
19	M	
20	Tu	
21	W	
22	Th	
23	F	
24	S	
25	☉	Third Sunday after Epiphany. Conv. of St. Paul.
26	M	
27	Tu	
28	W	
29	Th	
30	F	
31	S	

Royal College of Surgeons' Primary and Pass Examinations during this month.
The Registration and Museum Committees meet during this month.
Preliminary Examination in Arts of Apothecaries' Society held this month.

FEBRUARY, 1885.

1	✠	Septuagesima Sunday.
2	M	Univ. Lond. Matric. Pass List published.
3	Tu	
4	W	Last day for applications for House Offices, &c.*
5	Th	
6	F	
7	S	
8	✠	Sexagesima Sunday.
9	M	Univ. Lond. Classified Matric. List published.
10	Tu	Queen Victoria married, 1840.
11	W	Meeting to appoint House Officers, &c.
12	Th	
13	F	
14	S	
15	✠	Quinquagesima Sunday.
16	M	
17	Tu	
18	W	Ash Wednesday.
19	Th	
20	F	
21	S	
22	✠	First Sunday in Lent.
23	M	
24	Tu	St. Matthias.
25	W	
26	Th	
27	F	
28	S	

* *Applications for these appointments to be made to the Medical Secretary, by letter, stating the Candidate's qualifications, the offices which he has previously held in the Hospital, and the number of Maternity Cases attended.*

MARCH, 1885.

1	S	Second Sunday in Lent.
2	M	
3	Tu	House Officers, &c., commence duty.
4	W	Last day for applications for Clinical Clerkships and
5	Th	[Dresserships.
6	F	
7	S	
8	S	Third Sunday in Lent.
9	M	
10	Tu	Prince of Wales married, 1863.
11	W	Meeting to appoint Clinical Clerks and Dressers.
12	Th	
13	F	
14	S	
15	S	Fourth Sunday in Lent.
16	M	
17	Tu	
18	W	
19	Th	
20	F	
21	S	
22	S	Fifth Sunday in Lent.
23	M	Sessional Examination commences.
24	Tu	
25	W	Annunciation. Lady Day.
26	Th	
27	F	
28	S	
29	S	Palm Sunday.
30	M	
31	Tu	Registrar's Report for last year due.

APRIL, 1885.

1	W	
2	Th	
3	F	Good Friday.
4	S	
5	S	Easter Sunday.
6	M	Bank Holiday.
7	Tu	Clinical Clerks and Dressers commence duty.
8	W	
9	Th	
10	F	
11	S	
12	S	Low Sunday.
13	M	
14	Tu	
15	W	
16	Th	
17	F	
18	S	
19	S	Second Sunday after Easter.
20	M	
21	Tu	
22	W	
23	Th	
24	F	
25	S	St. Mark.
26	S	Third Sunday after Easter.
27	M	
28	Tu	
29	W	
30	Th	

Royal College of Surgeons' Primary and Pass Examinations during this month.
The Examinations for the Mead and Cheselden Medals take place this month.
The Annual Inspection of the Museum and meeting of Museum Committee take place during this month.
The Registration Committee meets during this month.
Preliminary Examination in Arts of Apothecaries' Society held this month.

MAY, 1885.

1	F	Summer Session commences. St. Philip and St. James
2	S	
3	✠	Fourth Sunday after Easter.
4	M	
5	Tu	
6	W	Last day for applications for House Offices, &c.*
7	Th	
8	F	
9	S	
10	✠	Rogation Sunday.
11	M	[H.M. the Queen, 1868.
12	Tu	First Stone of St. Thomas's New Hospital laid by
13	W	Meeting to appoint House Officers, &c.
14	Th	Ascension Day.
15	F	
16	S	
17	✠	Sunday after Ascension.
18	M	
19	Tu	
20	W	
21	Th	
22	F	
23	S	
24	✠	Whit Sunday. Queen Victoria born, 1819.
25	M	Bank Holiday.
26	Tu	
27	W	
28	Th	
29	F	
30	S	Last day for Certs. for Matric. Univ. Lond.
31	✠	Trinity Sunday.

Royal College of Surgeons' Primary and Pass Examinations during this Month.

** Applications for these appointments to be made to the Medical Secretary, by letter, stating the Candidate's qualifications, the offices which he has previously held in the Hospital, and the number of Maternity Cases attended.*

JUNE, 1885.

1	M	
2	Tu	House Officers, &c., commence duty. [Dresserships.
3	W	Last day for applications for Clinical Clerkships and
4	Th	
5	F	
6	S	
7	☩	First Sunday after Trinity.
8	M	
9	Tu	
10	W	Meeting to appoint Clinical Clerks and Dressers.
11	Th	St. Barnabas.
12	F	
13	S	
14	☩	Second Sunday after Trinity.
15	M	Univ. Lond. Matriculation Exam.
16	Tu	
17	W	
18	Th	
19	F	
20	S	Queen's Accession.
21	☩	[opened by H. M. the Queen, 1871. Third Sunday after Trin. New St. Thomas's Hospital
22	M	
23	Tu	
24	W	Midsummer Day. St. John Baptist.
25	Th	
26	F	
27	S	
28	☩	[crowned, 1838. Fourth Sunday after Trinity. Queen Victoria
29	M	St. Peter.
30	Tu	

The Harveian Oration is delivered at the Royal College of Physicians annually in the month of June.

Doctor of Science Examination at London University takes place within the first 21 days of June.

Distribution of Prizes for past Sessions during this month.

JULY, 1885.

1	W	
2	Th	
3	F	
4	S	Last day for notice for Prel. Sci. (M.B.) Exam. Univ. [Lond.
5	✠	Fifth Sunday after Trinity.
6	M	Univ. Lond. Matric. Pass List published.
7	Tu	Clinical Clerks and Dressers commence duty.
8	W	Last day for applications for House Offices, &c., for
9	Th	[September.*
10	F	
11	S	Last day for Certs. for Int. Med. Exam. Univ. Lond.
12	✠	Sixth Sunday after Trinity.
13	M	Univ. Lond. Classified Matric. List published.
14	Tu	
15	W	Meeting to appoint House Officers, &c., for September.
16	Th	
17	F	
18	S	
19	✠	Seventh Sunday after Trinity.
20	M	Univ. Lond. Prelim. Scientific (M.B.) Exam.
21	Tu	
22	W	
23	Th	
24	F	
25	S	St. James.
26	✠	Eighth Sunday after Trinity. [Med. Ex.
27	M	Sessional Examination commences. Univ. Lond. Int.
28	Tu	
29	W	
30	Th	
31	F	

Royal College of Surgeons' Primary and Pass Examinations during this Month. The Registration and Museum Committees meet during this month.

** Applications for these appointments to be made to the Medical Secretary, by letter, stating the Candidate's qualifications, the offices which he has previously held in the Hospital, and the number of Maternity Cases attended.*

AUGUST, 1885.

1	S	
2	☩	Ninth Sunday after Trinity.
3	M	Bank Holiday.
4	Tu	
5	W	
6	Th	
7	F	
8	S	
9	☩	Tenth Sunday after Trinity.
10	M	
11	Tu	
12	W	
13	Th	
14	F	
15	S	
16	☩	Eleventh Sunday after Trinity.
17	M	
18	Tu	
19	W	
20	Th	
21	F	
22	S	
23	☩	Twelfth Sunday after Trinity.
24	M	St. Bartholomew.
25	Tu	
26	W	
27	Th	
28	F	
29	S	
30	☩	Thirteenth Sunday after Trinity.
31	M	

SEPTEMBER, 1885.

1	Tu	House Officers, &c., commence duty. [Dresserships.
2	W	Last day for applications for Clinical Clerkships and
3	Th	
4	F	
5	S	
6	☩	Fourteenth Sunday after Trinity.
7	M	
8	Tu	
9	W	
10	Th	
11	F	
12	S	
13	☩	Fifteenth Sunday after Trinity.
14	M	
15	Tu	
16	W	
17	Th	
18	F	
19	S	
20	☩	Sixteenth Sunday after Trinity.
21	M	St. Matthew.
22	Tu	
23	W	Meeting to appoint Clinical Clerks and Dressers.
24	Th	
25	F	[to be awarded in 1886.
26	S	Announcement of subject and date for Grainger Prize,
27	☩	Seventeenth Sunday after Trinity.
28	M	
29	Tu	Michaelmas Day.
30	W	

Preliminary Examination in Arts of Apothecaries' Society held this month.

LIST OF STUDENTS

WHO HAVE OBTAINED

Honours in the Annual Examinations.

w *refers to Winter and* s *to Summer Session.*

The Addresses are those given at the time of Entry.

Acland (T. D.),* Oxford.
w 1877–8. 3rd Year Physical Society's Prize. Paper published in Hospital Reports, Vol. VIII.
w 1878–9. 4th Year Student. The Mead Medal.

Addy (B.), West Deeping, Lincolnshire.
1869. 1st Year Student, 1st College Prize; Physical Society's 1st Year's Prize.
1870. 2nd Year Student, 1st Coll. Prize; Physical Society's 2nd Year's Prize.
1871. 3rd Year Student, 1st Coll. Prize; Prosector's Prize; Treasurer's Gold Medal.

Allingham (W.),† Bermondsey.
1852. Descriptive Anatomy, Hon. Cert.; Chemistry, Hon. Cert.
1853. Midwifery, Hon. Cert.
1854. Medicine, Hon. Cert.; Descriptive Anatomy, Prize; Midwifery, Hon. Cert.; Physical Society's Essay, Prize; Surgery, Prize; Physiology, Hon. Cert.
1855. Medicine, Prize; Descriptive Anatomy, Hon. Cert.; Physiology, Hon. Cert.; Clinical Medicine, President's Prize; Clinical Medicine, Treasurer's Prize.

Anderson (W.),‡ Clapham, Surrey.
1865. 1st Year Student, 3rd Coll. Prize.
1866. 2nd Year Student, 3rd Coll. Prize.
1867. 3rd Year Student, 1st Coll. Prize; Physical Society's 3rd Year's Prize; Cheselden Medal.

Armstrong (H. G.), Reading.
s 1872. 1st Year Student, Hon. Cert.
w1874. 3rd Year Student, 3rd Coll. Prize.

* Demonstrator of Physiology and of Minute Pathology at St. Thomas's Hospital, Assistant Physician, Brompton Hospital,

† Late Surgical Tutor, Surgeon to Great Northern Hospital, Surgeon to St. Mark's Hospital.

‡ Assistant Surgeon to, and Joint Lecturer on Anatomy at, St. Thomas's Hospital. Examiner in Anatomy and Physiology, Royal College of Physicians; formerly Demonstrator of Anatomy, and Surgical Registrar at St. Thomas's Hospital, late Medical Officer to H.B.M. Legation in Japan, and Professor of Medical Sciences at the Japanese Naval Medical College, Tokei.

Atkinson (F. P.), Kew.
1861. 1st Year Matriculation Examination—Classics and Mathematics, Hon. Cert.

Atkinson (J.), Kirkby-Lonsdale.
1853. Chemistry, Hon. Cert.

Aveling (C. T.), Shacklewell.
1863. Matriculation Examination—Physics and Natural History, 1st College Prize; 1st Year Student, 1st College Prize.
1864. 2nd Year Student, 2nd College Prize.
1865. 3rd Year Student, 3rd College Prize.

Bailey (J. H. T.), Greenwich.
1843. Materia Medica, Hon. Cert.

Bain (J.)
1855. Midwifery, Hon. Cert.

Ballance (C. A.),§ Lower Clapton.
w 1875-6. 1st Year Student, Hon. Cert.
w 1876-7. 3rd Year Student, 3rd College Prize, and Physical Society's 3rd Year's Prize;
1880. The Solly Medal and Prize.

Barker (F. R.), Aldershot.
w 1875. Prosector's Prize.

Barron (H. J.), Guilford Street, Russell Square.
w 1877-8. 2nd Year Student, Prosector's Prize.

Barwell (R.) ‖ Norwich.
1847. Medicine, Hon. Cert.; Midwifery, Hon. Cert.
1848. Physical Society's Essay, Treasurer's Prize; Physiology and Anatomy, Hon. Cert.; Midwifery, Hon. Cert.; Dresser's Surg. Repts., Hon. Cert.
1850. Clinical Medicine, Prize.

Bateson (J. M.), Kirkby-Lonsdale.
1855. Chemistry, Hon. Cert.

Battle (W. H.),¶ Hanworth, Lincolnshire.
s 1874. Hon. Cert.
w 1875. 2nd Year Student, 3rd College Prize.
w 1876-7. 3rd Year Student, The First Solly Medal and Prize.

§ Assistant Surgeon to the West London Hospital. Demonstrator of Anatomy at St. Thomas's Hospital.

‖ Surgeon to Charing Cross Hospital.

¶ Surgical Registrar to St. Thomas's Hospital.

Beal (P.), Plymouth.
1844. Chemistry, 2nd Prize.

Beardsley (A.), Shipley, Derby.
1843. Midwifery, 2nd Prize.

Bedford (R. J.),* Sleaford.
1858. Midwifery, Hon. Cert.

Benwell (H. D.), Greenwich.
1843. Chemistry, 2nd Prize.
1845. Physiology and Anatomy, Medal.
1847. Clinical Medical Reports, Prize; Gen. Proficiency, Trea. Medal.

Bell (C. N.), Rochester.
1867. 3rd Year Student, 3rd Coll. Prize.

Bell (J. V.), Rochester.
1859. 1st Year Student, Treasurer's 2nd Prize; Matriculation Examination—Classics and Mathematics, Hon. Cert.
1860. 2nd Year Student, Hon. Cert.
1861. 3rd Year Student, 3rd Coll. Prize.

Bernays (H. L.), Chatham.
w 1873. Prosector's Prize.

Bernays (A. V.), Great Stanmore.
s 1876. 1st Year Student, Hon. Cert.
w 1880–81. 3rd Year Student, 1st Coll. Prize.

Bickle (L. W.), St. Leonard's-on-Sea.
s 1878. 1st Year Student, 3rd Coll. Prize;
s 1879. 2nd Year Student, 1st Coll. Prize.

Biddle (D.), Wotton-under-Edge.
1860. 1st Year Student, Trea. Prize; Matriculation Exam.—Prize.
1861. 2nd Year Student, Hon. Cert.
1862. 3rd Year Student, Hon. Cert.

Bidwell (H.), Ely.
w 1883–4. 4th Year Student, qualified for Mead Medal.

Birtwell (H. H.), Enfield, Lancashire.
1865. 3rd Year Student, Hon. Cert.

Black (J.), Kentish Town.
w 1872. 2nd Year Student, Prosector's Prize.

Black (W. S.), Chesterfield, Derby.
1855. Midwifery, Hon. Cert.; Medicine, Hon. Cert.

Blackett (W. C.), Durham.
1851. Descriptive Anatomy, Hon. Cert.

Blades (C. C.)
1855. Midwifery, Hon. Cert.

Bone (W.), Camberwell.
1857. 1st Year Student, Trea. 1st Prize.
1858. 2nd Year Student, Trea. 1st Prize.

Bonser (J. H.), Sutton-in-Ashfield.
1871. 3rd Year Student, 2nd Coll. Prize; Cheselden Medal.

Boulger (J.), Gravesend.
1870. 1st Year Student, Sir Wm. Tite's Scholarship.
1871. 2nd Year, Sir W. Tite's Scholarship.
w 1872. 3rd Year, Sir W. Tite's Scholarship.

* Late Assistant-Surgeon at the "Dreadnought" Hospital Ship.

Bowen (E.), LlynGwair, Pembroke.
1847. Descriptive and Surgical Anatomy, Hon. Cert.; Materia Medica, Hon. Cert.
1848. Descriptive and Surgical Anatomy, Hon. Cert.; Physiology and Anatomy, Hon. Cert.; Botany, Hon. Cert.; Comparative Anatomy, Hon. Cert.

Bown (J. Y.), America.
1848. Descriptive and Surgical Anatomy, Hon. Cert.

Brake (J.), Holt, Wilts.
1851. Matriculation Scholarship, Hon. Cert.; Descriptive Anatomy, Hon. Cert.; 1st Year Student, Scholarship; Chemistry, Hon. Cert.
1852. 2nd Year Student, Scholarship; Physiology, Prize; Materia Medica, Hon. Cert. Botany, Hon. Cert.; Medicine, Hon. Cert.
1853. 3rd Year Student, Scholarship; Clinical Medicine, Trea. Prize; Midwifery, Prize; Forensic Medicine, Prize.

Bristowe (J. S.),† Camberwell.
1847. Medicine, Hon. Cert.; Physiology and Anatomy, Hon. Cert.; Descriptive and Surgical Anatomy Prize.
1848. Descriptive and Surgical Anatomy, Hon. Cert.; Physiology and Anatomy, Prize; Practical Chemistry, Prize; Botany, Prize; Midwifery, Hon. Cert.; Comparative Anatomy, Prize; Surgery, Prize; General Proficiency, Treasurer's Medal.

Britton (T.), Doncaster.
1861. 1st Year Student, Hon. Cert.

Brock (J.), Northwich.
w 1872. 1st Year Student, 2nd Coll. Prize.
s 1872. Hon. Cert.

Brown (F. G.), London.
1860. 1st Year Student, Hon. Cert.
1861. 2nd Year Student, 3rd Coll. Prize.
1862. 3rd Year Student, 3rd Coll. Prize.

Brown (G. D.), Croydon.
1851. Physiology, Hon. Cert.; Botany, Prize; Surgery, Hon. Cert.;
1852. Physiology, Hon. Cert.; Physical Society's Essay, Treasurer's Prize; Medicine, Hon. Cert.; Pathology, Prize.

Brown (T. J. E.), Dorchester.
1848. Practical Midwifery, Hon. Cert.

Bucknill (E. R.), Bedford.
1855. 1st Year Student, Scholarship; Midwifery, Hon. Cert.;

† Physician to, and Joint Lecturer on Medicine at, St. Thomas's Hospital. Late Lecturer on General Pathology.

Chemistry, Hon. Cert.;
Descriptive Anatomy, Hon. Cert.;
Materia Medica, Hon. Cert.

Bull (J.), Norwood, Surrey.
1848. Midwifery, Hon. Cert.

Butler (W.), Stoke Newington.
1845. Materia Medica, Hon. Cert.

Caiger (F. F.), Gloucester-st., S.W.
w 1879–80. 1st Year Student, 3rd Coll. Prize.
w 1880–81. 2nd Year Student, 3rd Coll. Prize.
w 1882–83. 4th Year, the Mead Medal.

Cann (R. T.), Plymouth.
s 1882. 2nd Year Student. 1st Coll. Prize.
s. 1883. 3rd Year Student. 2nd Coll. Prize.

Carpenter (A.),* Rothwell.
1848. Descriptive and Surgical Anatomy, Hon. Cert.;
Chemistry Prize;
Materia Medica, Hon. Cert.;
Matriculation Scholarship, Prize.
1849. Physiology Hon. Cert.;
Midwifery, Hon. Cert.;
Descriptive Anatomy, 1st Prize;
Medicine, 2nd Prize.
1850. Physiology, Hon. Cert.;
Descriptive Anatomy, Hon. Cert.;
Botany, Prize;
Medicine, Prize;
Surgery, Prize; [Medal.
General Proficiency, Treasurer's
1851. (Accoucheur) Midwifery, Prize;
Essay on Chorea, Mr. N. Smith's Prize.
1852. Surgical Reports, President's Prize;
Medical Reports, Dr. Roots' Prize;
Ophthalmic Reports, a Governor's Prize;
Clinical Medicine, Senior Prize.

Carpenter (A. B.), Croydon.
w 1876–7. 1st Year Student, Hon. Cert.;

Carpenter (G. A.), Streatham.
w. 1880–81. 1st Year Student, 3rd Coll. Prize.
s 1881. 1st Coll. Prize.
w 1881–2. 2nd Year, Student 3rd Coll. Prize.
Prosector's Prize.

Carr (J. T.), Bombay.
1844. Surgery, Prize.

Castle (H.), Newport, I. of Wight.
w 1874–5. 1st Year Student, 2nd Coll. Prize.
s 1875. 3rd College Prize.
w 1876–7. Physical Society's 3rd Year's Prize.

Caudle (A. W. W.), Henfield, Sussex.
1858. Clinical Medicine, Prize.

Chaldecott (C. W.), Dorking.
1849. Descriptive Anatomy, Hon. Cert.;
Chemistry, Hon. Cert.;
Materia Medica, 2nd Prize;
1st Year Student, Scholarship.
1850. Physiology, Hon. Cert.
Surgery, Prize.
1851. Physiology, Prize;
Descriptive Anatomy, Hon. Cert.;
Medicine, Hon. Cert.;
Physical Society's Essay, Treasurer's Prize;
Surgery, Hon. Cert.;
General Proficiency, Treasurer's Silver Medal.

* Lecturer on State Medicine at St. Thomas's Hospital.

Chaldecott (T. A.), Newington.
1848. Descriptive Surgical Anatomy, Hon. Chemistry, Hon. Cert.; [Cert.;
Botany, Hon. Cert.;
Materia Medica, Hon. Cert.
Comparative Anat, Hon. Cert.;
Matriculation Scholarship, Prize;
Practical Chemistry Hon. Cert.
1849. Physiology, Hon. Cert.;
Midwifery, Hon. Cert.;
Surgery, 2nd Prize;
Medicine, Hon. Cert.
1850. Physiology, Hon. Cert.;
Forensic Medicine, Prize;
Pathology, Prize;
Medicine, Hon. Cert.;
Surgery, Hon. Cert.

Chapman (C. E.), Preston.
1855. Midwifery, Hon. Cert.;
Materia Medica, Hon. Cert.
1857. Clinical Assistant, Prize;
Physical Society's Essay, Prize.

Charpentier (A. E.).
1882–3. 4th Year, The Mead Medal Exam, Special Mention and Hon. Cert.

Cherry (A. H.), Clapham.
1845. Clinical Medicine, Hon. Cert.

Chipperfield (W. N.), Reading.
1852. 1st Year Student, Scholarship;
Descriptive Anatomy, Prize.
1853. 2nd Year Student, Scholarship;
Physiology, Prize;
Descriptive Anatomy, Prize;
Midwifery, Prize;
Physical Society's Essay, Prize;
Medicine, Prize;
Surgery, Prize.
1854. 3rd Year Student, Scholarship.
Medicine, Prize;
Descriptive Anatomy, Hon. Cert.
Midwifery, Prize;
Physical Society's Essay, Treasurer's Prize;
Forensic Medicine, Prize;
Chemistry, Hon. Cert.;
Comparative Anatomy, Prize;
Pathology, Prize;
Surgery and Surgical Anatomy, Cheselden Medal;
Clinical Medicine, Treasurer's Prize;
Physiology, Prize; [Medal.
General Proficiency, Treasurer's

Clapton (E.),† Stamford.
1851. Matriculation Scholarship, Hon. Cert.
1st Year Student, 1st Scholarship;
Descriptive Anatomy, Prize;
Chemistry, Prize.
1852. 2nd Year Student, Scholarship;
Physiology, Prize
Materia Medica, Prize;
Botany, Prize;
Medicine, Hon. Cert.
1853. 3rd Year Student, Scholarship;
Physiology, Hon. Cert.; [Prize;
Clinical Medicine, Treasurer's
Midwifery, Hon. Cert.;
Physical Society's Essay, Treasurer's Prize,
Medicine, Hon. Cert.

† Late Physician to, and Lecturer on Materia Medica at, St. Thomas's Hospital. Physician to the Magdalen Hospital.

Forensic Medicine, Hon. Cert.;
Chemistry, Hon. Cert.;
Surgery, Hon. Cert.
1854. Ophthalmic Reports, Governor's Prize;
Clinical Medicine, Mr. N. Smith's Prize.

Clapton (W.), Stamford.
1855. Midwifery, Hon. Cert.;
Descriptive Anatomy, Hon. Cert.;
Materia Medica, Prize.
1856. Clinical Medicine, Prize.
1858. Midwifery, Hon. Cert.

Clarke (A.), Dorking.
1856. 1st Year Student, Treasurer's 2nd Prize.

Clark (J. H.), Jamaica.
1867. 2nd Year Student, Physical Society's 2nd Year's Prize.

Clarkson (J. W.), Surbiton.
w 1872. 2nd Year Student, 3rd Coll. Prize.
w 1873. 3rd Year Student, 2nd Coll. Prize;
Surgery and Surgical Anatomy, Hon. Cert.

Cleghorn (G.), Bedford.
1872. 3rd Year Student, Hon. Cert.

Coggins (T.), Hayford, Woodstock.
1847. Chemistry, Hon. Cert.
1848. Descriptive and Surgical Anatomy, Hon. Cert.;
Midwifery, Hon. Cert.
1849. Midwifery, Hon. Cert.;
Medicine, Hon. Cert.
1850. Surgical Reports, Prize;
(Accoucheur) Midwifery, Hon. Cert.

Colby (W. T.), Malton, York.
1849. Descriptive Anatomy, Hon. Cert.;
Midwifery, Hon. Cert.

Collier (T. P.), Worship Square.
1847. Practical Midwifery, Prize.

Complin (E. J.), Charterhouse Sq.
1851. Clinical Medicine, Prize;
Medical Cases, President's Prize;
Surgery, Hon. Cert.
1852. Midwifery, Hon. Cert.;
Pathology, Hon. Cert.

Cook (S. B.), Cape of Good Hope.
s 1883. 1st year Student, 2nd Coll. Prize.

Cook (W.), Gainsboro'.
1844. Chemistry, Hon. Cert.;
Materia Medica, Hon. Cert.

Cooke (C. W.), Regent's Park.
w 1883–4. 1st year Student, 1st Entrance Science Scholarship.

Cooke (J.), Stamford.
1855. Comparative Anatomy, Prize;
Midwifery, Hon. Cert.;
Physiology, Hon. Cert.

Cory (R.),* Carlisle.
1870. Physical Society's 3rd Year's Prize.

Cousins (J. W.), Portsea.
1864. Descriptive Anatomy, Hon. Cert.;
Chemistry, Hon. Cert.
1855. Surgery, Prize;
Midwifery, Prize;
Midwifery, Hon. Cert.

* Assistant Obstetric Physician to, and Joint Lecturer on Forensic Medicine at, St. Thomas's Hospital.

1856. Clinical Medicine, Prize;
Surgery and Surgical Anatomy, Cheselden Medal.

Cowen (P.), Kennington.
1862. 1st Year Student, 2nd Coll. Prize.
1863. 2nd Year Student, 2nd Coll. Prize.
1864. 3rd Year Student, 2nd Coll. Prize.

Cox (E.), Maiden Newton, Dorsetshire.
1866. 1st Year Student, 3rd Coll. Prize.
1868. 3rd Year Student, 2nd Coll. Prize.

Coxwell (C. F.), Brighton.
1880. 4th Year Student, the Mead Medal.

Crick (S. A.), Cosby-hill, Leicestershire.
s 1875. 1st Year Student, Hon. Cert.
w 1875–6. Prosector's Prize.
w 1876-7. 3rd Year Student, 3rd Coll. Prize.

Croft (J.),† Clapton.
1851. Descriptive Anatomy, Hon. Cert.
1853. Midwifery, Hon. Cert.

Crofts (W. C.), Rowston, Lincoln.
1855. Surgery, Hon. Cert.;
Midwifery, Hon. Cert.

Crosby (T. B.), Gosberton, Lincoln.
1851. Physiology, Prize;
Descriptive Anatomy, Prize;
Medicine, Prize;
Surgery, Prize.
1852. Physiology, Prize;
Descriptive Anatomy, Hon. Cert.;
Medicine, Hon. Cert.;
Forensic Medicine, Prize;
Practical Chemistry, Prize;
Surgery, Hon. Cert.;
Surgery and Surgical Anatomy, *Bronze* Cheselden Medal;
Comparative Anatomy, Prize.

Crossman (J.), Redruth.
1871. Physical Society's 1st Year's Prize.
1872. Physical Society's 2nd Year's Prize.
1873. Physical Society's 3rd Year's Prize.

Davies (D.), Carmarthenshire.
1843. Chemistry, 1st Prize;
Midwifery, Hon. Cert.;
Materia Medica, Prize.
1844. Medicine, Hon. Cert.;
Physiology and Anatomy, Hon. Cert.
1845. Clinical Surgical Reports, Medal.

Davies (D. S.), Bristol.
1875–6. Physical Society's 1st Year's Prize.

Day (W. H.), Norwich.
1844. Surgery, Prize;
Physical Society's Essay, Hon. Cert.;
Dresser's Clinical Surgery, Prize.

Deck (J. F.), Nelson, New Zealand.
1860. 1st Year Student, 1st Coll. Prize.
1861. 2nd Year Student, 1st Coll. Prize;
Physical Society's Prize.
1862. 3rd Year Student, 1st Coll. Prize;
Physical Society's Prize;
Cheselden Medal;
Treasurer's Gold Medal.

† Member of Council and of Court of Examiners, Royal College of Surgeons. Surgeon to and Special Lecturer on Clinical Surgery at, St. Thomas's Hospital; late Assistant Demonstrator of Anatomy.

Dickerson (S.H.), Hartest, Suffolk.
1853. Physiology, Hon. Cert.;
Materia Medica, Hon. Cert.;
Midwifery, Hon. Cert.;
Medicine, Hon. Cert.

Dixon (E. L.), Preston, Lancashire.
1852. 1st Year Student, Scholarship;
Chemistry, Hon. Cert.
1853. 2nd Year Student, Scholarship;
Physiology, Hon. Cert.;
Materia Medica, Prize;
Descriptive Anatomy, Hon. Cert.;
Midwifery, Hon. Cert.;
Botany, Prize;
Medicine, Hon. Cert.
1854. 3rd Year Student, Scholarship;
Descriptive Anatomy, Hon. Cert.;
Practical Chemistry, Prize;
Physiology, Hon. Cert.

Dobson (N. C.),* Holbeach, Lincolnshire.
1865. 1st Year Student, 1st Coll. Prize.
1866. 2nd Year Student, 1st Coll. Prize.
1867. 3rd Year Student, 2nd Coll. Prize;
A Prize and Hon. Cert. for Proficiency in Surgery and Surgical Anatomy at the Cheselden Medal Examination;
Treasurer's Gold Medal.

Drake (A. J.), Kingsclere, Hants.
1870. 3rd Year Student, 1st Coll. Prize.

Drake (C. H.), Kingsclere, Hants.
1857. 1st Year Student, Hon. Cert.;
1858. 2nd Year Student, Treasurer's 1st Prize;
Clinical Medicine, 2nd Prize.
1859. 3rd Year Student, Hon. Cert.;
Surgery and Surgical Anatomy, Cheselden Medal;
General Proficiency, Treasurer's Medal.

Drake (T.), Kingsclere, Hants.
1858. 2nd Year Student, Treasurer's 1st Prize;
1859. 2nd Year Student, President's Prize.
1860. 3rd Year, 1st College Prize;
Surgery and Surgical Anatomy, Cheselden Medal;
General Proficiency, Treasurer's Medal.

Drew (G. F. A.), Plymouth.
1848. Descriptive and Surg. Anat. Prize;
Chemistry, Hon. Cert.;
Botany, Prize;
Comparative Anatomy, Hon. Cert.;
Practical Chemistry, Prize;
Gen. Proficiency, Hon. Cert.
1849. Physiology, 2nd Prize;
Midwifery, Hon. Cert.;
Descriptive Anatomy, Hon. Cert.;
Medicine, Hon. Cert.
1850. Physiology, Prize;
Descriptive Anatomy, Hon. Cert.;
Medicine, Hon. Cert.;
Surgery, Hon. Cert.

Dukes (C.), Dalston.
1865. 1st Year Student, Hon. Cert.
1867. 3rd Year Student, Hon. Cert.;
Prosector's Prize and Hon. Cert.

* Surgeon to the Bristol General Hospital and Lecturer on Surgery at the Bristol Medical School.

Duncan (H.), London.
w 1882-3. 1st Year Student, 1st Entrance Science Scholarship, 1st Coll. Prize.
w 1883-4. 2nd Year Student, Prosector's Prize.

Duncan (W. A.),† Manchester.
w 1876-7. 1st Year Student, The William Tite Scholarship.
s 1877. 1st College Prize.
w 1877-8. 2nd Year Student, The Musgrove Scholarship.
w 1877-8. 2nd Year Physical Society's Prize.
s 1878. 1st College Prize.
w 1878-9. 2nd Tenure Musgrove Scholarship.
1st College Prize;
3rd Year Physical Society's Prize;
Grainger Testimonial Prize.
1880. 4th Year Student, The Cheselden Medal.
The Treasurer's Medal.
w 1881-2. The Solly Medal and Prize.

Dunman (G.), Camberwell.
1852. Chemistry, Hon. Cert.
1854. Midwifery, Hon. Cert.

Dyer (F. J.), Blackheath.
1847. Chemistry, Prize;
Materia Medica, Hon. Cert.;
1849. Physiology, Hon. Cert.;
Midwifery, 2nd Prize;
Medicine, Hon. Cert.

Eddowes (J. H.), Loughboro'.
1843. Physiology and Anatomy, Hon. Cert.;
Chemistry, Hon. Cert.;
Comparative Anatomy, Prize.
1844. Physiology and Anatomy, Hon. Cert.;
Clinical Medical Reports, Silver Medal.
1845. Clinical Medicine, Prize.

Eddowes (W. D.), Loughboro'.
1845. Descriptive and Surgical Anatomy, Prize.

Edmonds (S.), St. Helen's, Lancashire.
1852. Chemistry, Hon. Cert.
1853. Midwifery, Hon. Cert.;
Medicine, Hon. Cert.;
Surgery, Hon. Cert.
1854. Surgery and Surgical Anatomy, Hon. Cert.;
Clinical Medicine, Treas. Prize;
Clinical Medicine, Pres. Prize.
1855. Surgical Reports, Pres. Prize;
Clinical Medicine, Dr. Roots' Prize.

Edwards (S.), Littlehampton.
1855. Midwifery, Hon. Cert.

Edwards (V.), Woodbridge, Suffolk.
1843. Surgery, Prize.

Elborough (P. J.), Herne Bay.
1845. Chemistry, Hon. Cert.
1847. Medicine, Hon. Cert.;
Midwifery, Prize.
1848. Medicine, Hon. Cert.;
Surgery, Hon. Cert.;
Surgical Report, Pres. Prize.

† Assistant Obstetric Physician to Middlesex Hospital. Obstetric Physician Royal Hospital for Women and Children.

ELLIS (J.), Portsea, Hants.
1857. Clinical Assistant (Medicine), Hon. Cert.

ELWIN (C. J.), London.
1855. Practical Midwifery, Prize.

EVANS (C. W. DE LACEY), Bangor.
w 1876-7. 3rd Year Student, The Solly Prize and Hon. Cert.

FAIRBANK (J.), Islington.
1865. 1st Year Student, Hon. Cert.
1866. 2nd Year Student, Prosec. Prize.

FARRANT (S.), Collumpton, Devon.
1859. 2nd Year Student, Hon. Cert.
1860. 3rd Year Student, Hon. Cert.

FAULKNER (R.), Camberwell.
1844. Botany, Prize;
Clinical Medical Reports, Hon. Cert.

FAWSSETT (F.), Surbiton.
w 1883-4. 1st Year Student, 2nd Entrance Science Scholarship. The William Tite Scholarship.

FELL (W.), Kensington.
w 1878-9. 2nd Year Student Prosector Prize.

FENTON (H. A. H.), Westminster.
w 1875-6. 1st Entrance Science Scholarship.
s 1876. 1st Year Student, 1st College Prize.

FERNIE (A.), Yeldon, Beds.
1853. Physiology, Hon. Cert.;
Surgery, Hon. Cert.

FERNIE (W. T.), Yeldon, Beds.
1852. Practical Midwifery, Prize;
Midwifery, Hon. Cert.

FISHER (T.), St. Michael's.
s 1872. 1st Year Student, Hon. Cert.
s 1873. 2nd Year Student, 2nd College Prize.
w 1874. 2nd Year Student, 3rd College Prize.
w 1875. 3rd Year Student, Surgery and Surgical Anatomy, Prize, and Cert. of Hon.

FORD (G. W.), Cape of Good Hope.
w. 1880-81. 3rd Year Student, Prosector's Prize.

FOWLER (J. T.), Winterton, Lincoln.
1854. Chemistry, Hon. Cert.
1855. Botany, Hon. Cert.

FOWLER (J.), Winterton, Lincoln.
1859. 1st Year Student, Hon. Cert.
1860. 2nd Year Student, 2nd College Prize.
1861. 3rd Year Student, 2nd College Prize.

FREEMAN (D.), Kennington.
1859. Clinical Medicine, Prize.

FREEMAN (A. J.), Southsea, Hants.
1865. 3rd Year Student, Hon. Cert.

FULTON (J. A.), Stockwell.
1852. Botany, Hon. Cert.
1853. Practical Chemistry, Prize.

FURNIVAL (F. H.), Nottingham.
w 1878-9. 1st Year Student;
The Sir Wm. Tite Scholarship.

GARDNER (E. B.), London.
1858. Matriculation Examination—Classics and Mathematics, Prize.

GARTON (W.), St. Helier's.
1870. 2nd Year Student, 2nd College Prize.
Physical Society's 2nd Year's Prize.
1871. Physical Society's 3rd Year's Prize.

GIMBLETT (J.), Taunton.
1860. 1st Year Student, Hon. Cert.

GEORGE (C. F.), Kirton-on-Lindsay.
1855. Midwifery, Hon. Cert.
1856. 2nd Year Student, Dr. Roots' Prize.
1857. 3rd Year Student, Hon. Cert.;
Surgery and Surgical Anatomy, Cheselden Medal.

GERVIS (F. H.), Tiverton.
1861. 1st Year Matriculation Scholarship.—College Prize, 2nd College Prize.
1862. 2nd Year Student, 1st College Prize.
1863. 3rd Year Student, Hon. Cert. and Physical Society's Prize.

GERVIS (H.),* Tiverton.
1856. 1st Year Student, Trea. 1st Prize;
Matriculation Examination, Physics, &c., Prize.
1857. 2nd Year Student, Pres. Prize;
Physical Society's Essay, Prize.
1858. Clinical Assistant (Medicine), 2nd Prize;
Physical Society's Essay, Prize;
General Proficiency, Treasurer's Medal.

GILES (F. W.), Henley-on-Thames.
w 1875-6. 3rd Year Student, Hon. Cert.

GIMLETTE (G. H. D.). Southsea.
s 1874. 1st Year Student, Hon. Cert.
w 1875-6. 3rd Year Student. Hon. Cert.
w 1876-7. Physical Society's 3rd Year's Prize.

GLOVER (J. P.), Lansdowne Road.
w 1881-2. 3rd Year Student, 3rd Coll. Prize.

GODDARD (E.), London.
1860. Matriculation Examination, Classics, &c., Prize.

GODDARD (L.), London.
1856 Matriculation Examination, Classics and Mathematics, Prize.

GODFREY (A. E.), Northampton.
s 1883. 2nd Year Student, 2nd Coll. Prize.
w 1883-4 3rd Year Student, 2nd Coll. Prize.

GOODDY (E. S.), Hampstead.
w 1882-3. 2nd Year Student, 3rd Coll Prize.
s 1883. 2nd Year Student, 1st Coll. Prize.

GOWLAND (W.), London.
1845. Botany, Hon. Cert.

GRABHAM (C.), Islington.
1857. Matriculation Examination, Modern Languages, Prize.

GRABHAM (G. W.),† Islington.
1855. Matriculation Examination, Scholarship;
Midwifery, Hon. Cert.;
Materia Medica, Hon. Cert.

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* Obstetric Physician to, and Lecturer on Midwifery and Diseases of Women and Children at, St. Thomas's Hospital. Examiner in Obstetric Medicine, University of London.

† Government Inspector of Lunatic Asylums and Hospitals, New Zealand. Late Resident Medical Superintendent at Earlswood Asylum.

Grabham (J.), Rochford, Essex.
1848. Descriptive and Surgical Anatomy, Hon. Cert.;
Chemistry, Hon. Cert.;
Botany, Hon. Cert.;
Comparative Anatomy, Prize.
1850. Physiology, Hon. Cert.
1851. Physiology, Hon. Cert.;
Descriptive Anatomy, Hon. Cert.;
Forensic Medicine, Prize;
Surgery, Prize;
Midwifery, Hon. Cert.

Grabham (M. C.), Islington.
1860. 2nd Year Student, Hon. Cert.
1861. 3rd Year Student, Hon. Cert.

Greaves (C. A.), Derby.
1861. 1st Year Student, Treasurer's Prize; Matriculation Examination, Hon. Cert.
1862. 2nd Year Student, 2nd College Prize; Physical Society's Prize.
1863. 3rd Year Student, 1st College Prize; Physical Society's Prize;
Cheselden Medal.

Green (C. D.), New Cross.
w 1879–80. 1st Year Student, The Wm. Tite Scholarship.
s 1880. 3rd College Prize.
w 1880-81. 1st College Prize.
s 1882. 1st Coll. Prize.
w 1882–3. 4th Year Student, qualified for Treasurer's Gold Medal.

Green (J. T.), Peckham, Surrey.
1865. 1st Year Student, Physical Society's Prize.

Green (M. H.), Peckham.
s 1873. 1st Year Student, 2nd College Prize.

Grose (S.), Boston, Lincoln.
1858. 2nd Year Student, Hon. Cert.
1859. Physical Society's Essay Prize.

Griffiths (A. L.), London.
1859. Midwifery, Hon. Cert.

Gulliver (G.),* Canterbury.
w 1876-7. Physical Society's 2nd Year's Prize.

Gurney (R. A. F.), Rampton, Cambridge.
1851. Practical Midwifery, Prize.

Hague (S.),† Camberwell.
1863. 1st Year Student, 2nd Coll. Prize.

Haig-Brown (C. W.), Godalming.
s 1878. 1st Year Student, 2nd College Prize;
w 1878-9. 2nd Year Student, 2nd College
w 1880–81. The Cheselden Medal. [Prize.

Hammerton (E.), Elland, York.
1857. 1st Year Student, Hon. Cert.

Hammond (J. H.), Bridlington, York.
1850. Medical Cases, President's Prize.

Harding (J. A.), Bath.
1859. Clinical Medicine, 2nd Prize.
1860. Clinical Assistant (Medicine), 1st Prize.

Harper (R.), Brighton.
1844. Clinical Surgical Reports, Hon. Cert.
1845. Physical Society's Essay, Prize.
Dresser's Clinical Surgery, Prize.

* Assistant Physician to St. Thomas's Hospital, Assistant Physician to London Fever Hospital.

† Late Medical Registrar at St Thomas's Hospital.

Haslam (W. F.).† Reading.
s 1876. 2nd Year Student, 1st College Prize.
w 1877-8. The Cheselden Medal.

Hatchett (F. W.), S. Wales.
s 1880. 1st Year Student, 1st College Prize.

Hatton (G. S.), Newent, Glo'stershire.
w 1876-7. 2nd Year Student, Prosector's [Prize.

Hawkins (H. P.). Hawkhurst.
w 1882–3. 1st Year Student, The William Tite Scholarship.
w 1883–4. 2nd Year Student. The Peacock Scholarship.

Heelis (R.), Carshalton.
s 1877. 1st Year Student, 2nd College Prize.
s 1878. 2nd Year Student. 2nd Coll. Prize.

Heffernan (H. H.), Southsea.
w 1883–4. 1st Year Student. 2nd Coll. Prize.

Heighton (T.), Leicester.
w 1873. 3rd Year Student, Hon. Cert.

Hewlett (T. J.), Harrow.
1850. Matriculation Scholarship, Prize.

Heygate (W. N.), Harslope, Bucks.
1863. 2nd Year Student, Hon. Cert.
1864. 3rd Year Student, Hon. Cert.

Hicks (J. W.).§ Highgate New Town, N.
1852. 1st Year Student, Treasurer's 1st Prize.
1860 2nd Year Student, 1st College Prize; Physical Society's Prize.
1861. 3rd Year Student, 1st College Prize; Physical Society's Prize;
Cheselden Medal;
Treasurer's Gold Medal.

Higgins (A. H.), Bermondsey.
1857. Midwifery, Hon. Cert.

Hilditch (J.), Sandbach, Cheshire.
1857. 1st Year Student, Hon. Cert.
1858. Physical Society's Essay, Prize.
1859. Essay on Neuralgia, Mr. N. Smith's Prize.

Hodges (H. B.).
1855. Midwifery, Hon. Cert.

Hodges (R.), London.
1843. Physiology and Anatomy, Hon. Cert.;
Medicine, Hon. Cert.;
Clinical Medicine, Hon. Cert.;
Surgical Essay, Silver Medal.

Ho Kai, Hong Kong, China.
w 1875–6. 1st Year Student, Hon. Cert.
s 1876. Hon. Cert.
w 1876–7. 2nd Year Student, Hon. Cert.

Holberton (H. N.), Hampton.
w 1876–7. 2nd Entrance Science Scholarship, and 2nd College Prize.
w 1877–8. 2nd Year Student, 1st Coll. Prize.

Hooper (J. H.), Upton Warren.
1858. 1st Year Student, Hon. Cert.
1859. 2nd Year Student, College Prize.
1860. 3rd Year Student, Hon. Cert.

Hopton (A. W.), Stockwell.
1851. Descriptive Anatomy, Hon. Cert.

‡ Assistant Surgeon to the Birmingham General Hospital, late Demonstrator of Anatomy at St. Thomas's Hospital.

§ Late Lecturer on Botany at St. Thomas's Hospital; late Curator of the Museum.

Howell (T.), London.
1850. Practical Midwifery, Prize.

Hubbard (J. W.), Leicester.
1847. Clinical Medical Reports, Prize; Medicine, Prize; Physiology and Anatomy, Hon. Cert. Physical Society's Essay, Treasurer's Prize.

Hull (W. W.), Acton.
w 1878-9. 2nd Entrance Science Scholarship.
w 1881-2. The Mead Medal.

Hunt (J. A.), Derby.
w 1873. 1st Year Student, Hon. Cert.
w 1874. Prosector's Prize.

Hunter (W. F.), Margate.
1859. 1st Year Student, Hon. Cert.; Matriculation Examination in Classics and Mathematics, Prize; Matriculation Examination in Modern Languages, Prize.
1860. 2nd Year Student, 3rd Coll. Prize.
1861. 3rd Year Student, Hon. Cert.

Hurman (H. B.), Bridgewater.
1853. Midwifery, Hon. Cert.

Hutton (J. S.), Sevenoaks.
w 1881-2. Entrance Science Scholarship. 2nd Coll. Prize.
s 1882. 1st Coll. Prize.

Iles (D.), Fairford.
1863. 2nd Year Student, Hon. Cert.
1864. 3rd Year Student, Hon. Cert.

Inglis (W. W.),* Brixton Hill.
1864. 1st Year Student, 2nd Coll. Prize.
1865. 2nd Year Student, 2nd Coll. Prize
1866. 3rd Year Student, 3rd Coll. Prize; Cheselden Medal.

Ives (R.)
1855. Midwifery, Hon. Cert.

Jackson (T. C.), Rotherhithe.
1844. Materia Medica, Hon. Cert.

Jacob (E. H.), Winchester.
w 1875-6. Physical Society's 3rd Year's Prize.

Jacobson (T. E.), Sleaford, Lincoln.
1852. Practical Midwifery, Prize.

Jardine (J. L.), Brixton.
1848. Physiology and Anatomy, Hon. Cert.
1850. Medical Reports, Dr. Roots' Prize.

Jay (M.), Wallaroo, South Australia.
w 1877-8. 1st Year Student, 3rd Coll. Prize.
w 1878-9. 2nd Year Student, 2nd College Prize; Prosector's Prize.

Jefferson (T. J.), Hull.
1861. 2nd Year Student, Hon. Cert.
1862. 3rd Year Student, Hon. Cert.

Johnson (W. G.), Wandsworth.
1853. Chemistry, Hon. Cert.
1854. Midwifery, Hon. Cert.
1855. Comparative Anatomy, Prize; Midwifery, Hon. Cert.

Johnston (G. D.).
w 1882-3. 4th Year, Cheselden Medal.

* Late Medical Registrar at St. Thomas's Hospital.

Jones (S.),†Cricklewood, Middlesex.
1851. Matriculation Scholarship, Prize; Descriptive Anatomy, Hon. Cert.; Chemistry, Hon. Cert.; 1st Year Student, Scholarship.
1852. 2nd Year Student, Scholarship; Physiology, Hon. Cert.; Descriptive Anatomy, Prize; Botany, Hon. Cert.
1853. Physiology, Hon. Cert.; Descriptive Anatomy, Hon. Cert.; 3rd Year Student, Scholarship; Materia Medica, Hon. Cert.

Jones (Sydney H.), George Street, Hanover Square.
w 1881-2. 1st Year Student, Entrance Science Scholarship. The Wm. Tite Scholarship.
w 1882-3. 2nd Year Student, ½ Musgrove Scholarship and 1st Coll. Prize combined. Prosector's Prize.
w 1883-4. 3rd Year Student, 2nd tenure of ½ Musgrove Scholarship, with 1st College Prize.

Jones (A. O.), Islington.
1862. 1st Year Student, Hon. Cert.

Jones (J.), Ilfracombe.
1863. Matriculation Examination — Modern Languages and Modern History, College Prize.

Jones (W. Wansbrough),‡ Leek.
w 1877-8. 1st Year Student; 1st Entrance Science Scholarship; £60. The William Tite Scholarship.
w 1877-8. 1st Year Physical Society's Prize;
s 1878. 1st Year Student, 1st Coll. Prize;
w 1878-9. 2nd Year Student, The College Scholarship;
s 1879. 2nd Year Student, 2nd Coll. Prize;
w 1879-80. 3rd Year Student, 2nd tenure of Coll. Scholarship, and 1st Coll. Prize.
w 1880-81. The Mead Medal; Treasurer's Gold Medal.

Joseph (S. W. J.), St. Leonards.
1873. Physical Society's 2nd Year Prize.

Keele (J. T.), South Lambeth.
1853. Materia Medica, Hon. Cert.; Midwifery, Hon. Cert.

Kerakoose (J.), East Indies.
1854. Midwifery, Hon. Cert.

Keyworth (J. W.),§ Aston, Berks.
1848. Chemistry, Hon. Cert.; Materia Medica, Prize; General Proficiency, Hon. Cert.
1849. Physiology, Hon. Cert.; Midwifery, 3rd Prize; Medicine, Hon. Cert.; Physical Society's Essay, Prize.

† Member of Council, Royal College of Surgeons; Surgeon to, and Joint Lecturer on Surgery at, St. Thomas's Hospital; late Lecturer on Anatomy and Ophthalmic Surgery.

‡ Ratcliffe Travelling Fellowship, Oxford, 1880.

§ Late Lecturer on Physiology at Sydenham College, Birmingham.

1850. Physiology, Hon. Cert.; (Accoucheur)Midwifery,Hon. Cert.; Ophthalmic Reports, a Governor's Prize;
Essay on Neuralgia, Mr. Newman Smith's Prize.
1851. Comparative Anatomy, Prize; Clinical Medicine, Prize; Surgical Reports, Prize; Midwifery, Prize;
* Medical Reports, Prize; Pathology, Prize; Physical Society's Essay, Prize.

KIDD (H. C.), U. Norwood.
w 1881–2. 1st Year Student, 3rd Coll. Prize.

KNAGGS (R. H. E.), Trinidad, W. Indies.
w 1875-6. Prosector's Prize.

LAKE (W. W.), Ilford, Essex.
1873. Physical Society's 1st Year's Prize.

LAKE (R.), Dover.
w 1881–2. 2nd Year Student, Prosector's Prize.
w 1883–4. 4th Year Student, qualified for Cheselden Medal.

LANKESTER (H.), Poole, Dorset.
1850. 1st Year Student, Scholarship; Descriptive Anatomy, 1st Prize; Chemistry, Prize.
1851. Physiology, Prize; Materia Medica, Prize; Descriptive Anatomy, Hon. Cert.; Botany, Hon. Cert.; Medicine, Prize; Physical Society's Essay, Prize; Surgery, Hon. Cert.
1852. 3rd Year Student, Scholarship; Physiology, Hon. Cert.; Descriptive Anatomy, Hon. Cert., Medical Cases, President's Prize; Medicine, Prize; Surgery, Prize; Surgery and Surgical Anatomy Cheselden Medal; General Proficiency, Treasurer's Medal.
1853. Surgical Essay, President's Prize.

LANKESTER (H. H.), Leicester.
w. 1880–81. Entrance Science Scholarship. 1st Year Student 2nd Coll. Prize.
w 1881–2. 2nd Year Student, The College Scholarship Two Years.

LAVER (H.)
1855. Midwifery, Hon. Cert.

LAVER (A. H.), Rayleigh.
1870. 1st Year Student, 3rd Coll. Prize.
1871. 2nd Year Student, 2nd Coll. Prize.
w 1872. 3rd Year Student, 2nd Coll. Prize, Cheselden Medal.

LAWSON (R.), St. Andrews, N.B.
w 1880–81. 1st Entrance Science Scholarship. 1st Year Student, The Wm. Tite Scholarship.
s 1881. 2nd Coll. Prize.
w 1881–2. 2nd Year, 2nd Coll. Prize.
w 1882–3. 3rd Year, 2nd Coll. Prize.
w 1883–4. 4th Year Student, The Cheselden Medal.
Treasurer's Gold Medal.

LAXTON (T. L.), Stamford.
w1876-7. 2nd Year Student, Prosector's Prize.

LEDGER (M.), London.
1845. Dresser's Clinical Surgery, Prize.

LEES (J.),* Wolverhampton.
1859. 1st Year Student, Hon. Cert.; 3rd Year Student, Hon. Cert.; Physical Society's Prize.

LEESON (T.), Snaith, York.
1847. Medicine, Hon. Cert.; Surgery, Prize; Physiology and Anatomy, Hon. Cert.; Descriptive and Surgical Anatomy, Hon. Cert.; Midwifery, Hon. Cert.
1848. Descriptive and Surgical Anatomy, Hon. Cert.; Physiology and Anatomy, Hon. Cert.; Medicine, Hon. Cert.; Midwifery, Prize.

LE GROS (J.), Jersey.
1844. Medicine, Hon. Cert.; Midwifery, 1st Prize.
1845. Clinical Medical Reports, Medal; Medicine, Hon. Cert.; Dresser's Clinical Surgery, Prize.

LEREW (F. W.), Maida Vale.
s 1876. 1st Year Student, Hon. Cert.

LITTLEJOHN (S. G.), Falmouth, Jamaica.
1865. 1st Year Student, Hon. Cert.

LOCOCK (H. S.), Blackheath.
1848. Descriptive and Surgical Anatomy, Hon. Cert.; Physiology and Anatomy, Hon. Cert.; Midwifery, Hon. Cert.
1849. Physiology, Hon. Cert.

LONGSTAFF (G. B.), Wandsworth.
w 1873-4. 1st Year Student, 2nd Coll. Prize.
s 1874. 1st Coll. Prize; Physical Society's 1st Year's Prize;
s 1875. 2nd Year Student, 2nd Coll. Prize.
w 1875-6. 3rd Year Student, 1st Coll. Prize.
w 1876-7. 4th Year Student, Mead Medal.

LUSH (W. H.), Devizes.
w 1872. 2nd Year Student, Prosector's Prize.

LUSH (J. S.), West Lavington.
s 1873. 1st Year Student, 3rd Coll. Prize.

MACKENZIE (H. W. G.), Edinburgh.
w 1882–3. 3rd Year Student, 3rd Coll. Prize.
s 1883. 3rd Year Student, 1st Coll. Prize.
w 1883–4. 4th Year Student, The Mead Medal.

MACMURDO (H. H.), New Broad Street.
1847. Chemistry, Hon. Cert.
1849. Midwifery, Hon. Cert.

MANBY (W. G.), Barking, Essex.
1851. Descriptive Anatomy, Hon. Cert.

MARCH (H. C.), Newbury.
1868. 1st Year Student, Treasurer's 2nd Prize.
1856. 2nd Year Student, Hon. Cert.
1860. 3rd Year Student, Hon. Cert.

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* Late Demonstrator of Morbid Anatomy at St. Thomas's Hospital.

Mason (M. T.), Newington.
1845. Practical Midwifery, Hon. Cert.

Maybury (A. C.), Frimley, Surrey
1865. 3rd Year Student, Hon. Cert.

Maybury (W. A.), Frimley, Surrey.
1867. 1st Year Student, 3rd College Prize.

Maybury (H. M.), Frimley, Surrey.
1869. 1st Year Student, 2nd Coll. Prize;
1871. 3rd Year Student, 3rd Coll. Prize.

Maybury (A. V.), Frimley.
1870. 1st Year Student, 2nd Coll. Prize.
1871. 2nd Year Student, 1st Coll. Prize.
w1872. 3rd Year Student, 1st Coll. Prize; Treasurer's Gold Medal.

Maynard (J. C. M.)
1855. Midwifery, Hon. Cert.

Meadows (H.), Leicester.
1867. 1st Year Student, The William Tite Scholarship; Phys. Soc. 1st Year's Prize.
1868. 2nd Year, Tite Scholarship; Phys. Soc. 2nd Year's Prize.

Miller (B.), London.
1845. Midwifery, Hon. Cert.; Practical Midwifery, Prize; Clinical Medicine, Prize.

Milne (C. W.), Aberdeen.
1865. 1st Year Student, Hon. Cert.

Mitchell (J.), Leicester.
1866. 1st Year Student, 2nd Coll. Prize; Phys. Society's 1st Year's Prize.
1867. 2nd Year Student, 2nd Coll. Prize.
1868. 3rd Year Student, 2nd Coll. Prize.

Money (F. J.), Offham, Kent.
1849. Descriptive Anatomy, 2nd Prize; Chemistry, Prize; Materia Medica, 1st Prize; Matriculation Scholarship, Prize; 1st Year Student Scholarship.
1850. Physiology, Prize; Comparative Anatomy, Prize; Descriptive Anatomy, Prize; Medicine, Prize; Surgery, Hon. Cert.
1851. Descriptive Anatomy, Hon. Cert.; Midwifery, Prize; Medicine, Prize; Physical Society's Essay, Prize; Surgery, Prize; Surgery and Surgical Anatomy, Cheselden Medal; General Proficiency, Treasurer's Gold Medal.

Moreton (J. E.), Marton, Cheshire.
1850. 1st Year Student, Scholarship; Descriptive Anatomy, Hon. Cert.; Chemistry, Hon. Cert.
1851. Materia Medica, Hon. Cert.; Botany, Hon. Cert.;
1852. Physiology, Prize; Descriptive Anatomy, Prize; Physical Society's Essay, Prize; Medicine, Prize; Surgery, Prize; 2nd Year Student, Scholarship.
1853. 3rd Year Student, Scholarship; Physiology, Prize; Clinical Medicine, Pres. Prize; Clinical Medicine, Treas. Prize. Clinical Medicine, Mr. N. Smith's Prize; Descriptive Anatomy, Hon. Cert.; Midwifery, Hon. Cert.; Ophthalmic Surgery, Prize; Medicine, Prize; Forensic Medicine, Hon. Cert.; Surgery, Hon. Cert. Surgery and Surgical Anatomy; Cheselden Medal; Gen. Proficiency, Treas. Medal.
1854. Clinical Med., Dr. Roots' Prize; Pathology, Hon. Cert.

Moreton (T.), Marton, Cheshire.
1857. 1st Year Student, Treasurer's 2nd Prize; Matriculation Examination, Classics and Mathematics, Prize.
1858. Clinical Medicine, Prize.
1859. 3rd Year Student, Hon. Cert.; Clinical Medicine, Hon. Cert.

Morgan (S.), London.
1852. Descriptive Anatomy, Hon. Cert.
1853. Midwifery, Hon. Cert.
1854. Midwifery, Hon. Cert.; Forensic Medicine, 2nd Prize.

Morris (C. K.), Spalding, Lincolnshire.
w1875. Prosector's Prize.

Morton (J.), Holbeach, Lincoln.
1861. 1st Year Student, Hon. Cert.
1862. 2nd Year Student, Hon. Cert.
1863. 3rd Year Student, Hon. Cert.

Moxon (H. M.), Brigsham.
1871. Prosector's Prize.

Musson (W. E.), Birkholme, Lincoln.
1850. Matriculation Scholarship, Prize; Descriptive Anatomy, Hon. Cert.
1851. Physiology, Hon. Cert.; Comparative Anatomy, Hon. Cert.; Medicine, Hon. Cert.

Newby (C. H.), London.
1870. Prosector's Prize.

Newsholme (A.), Bradford.
w1875-6. 1st Year Student, 1st Coll. Prize.
w1876-7. 2nd Year Student, 1st College Scholarship.
s 1877. Ditto 1st Coll. Prize.
w1877-8. 3rd Year Student, The "College Scholarship," 1st Coll. Prize.

Newth (A. H.), Kennington, Surrey.
1865. 1st Year Student, Hon. Cert.

Nichol (R.), Camberwell.
1844. Chemistry, 1st Prize; Materia Medica, Prize.
1845. Physiology and Anatomy, Hon. Cert.; Botany, Prize; Comparative Anatomy, Prize.

Nicholson (F. W.), Putney.
s 1877. 1st Year Student, 3rd Coll. Prize.
w1877-8. 2nd Year Student, Prosector's Prize.

Nicholson (J. F.),* Brigg, Lincoln.
w 1873. 1st Year Student, 1st Coll. Prize.

* Physician to the Hull General Infirmary.

s 1873. 1st Year Student, 1st Coll. Prize.
w 1874. 2nd Year Student, 1st Coll. Prize.
s 1874. Ditto 1st Coll. Prize.
w 1875. 3rd Year Student, 1st Coll. Prize; Cheselden Medal; Mead Medal; Treasurer's Gold Medal.

O'Callaghan (C.), Killarney.
1847. Chemistry, Hon. Cert.; Materia Medica, Prize.
1848. Medical Reports, President's Prize; Physiology and Anatomy, Hon. Cert.; Midwifery, Hon. Cert.; Practical Midwifery, Prize; Forensic Medicine, Prize; Physical Society's Essay, Prize.
1849. Physical Society's Essay, Treasurer's Prize; Resident Accoucheur's Report, Prize.

Orange (W.),* Torquay.
1854. Midwifery, Hon. Cert.
1856. Midwifery, Hon. Cert.

Ord (G. R.), Brixton.
1858. Midwifery, Hon. Cert.

Ord (W. M.),† Brixton.
1853. Matriculation Examination, Scholarship; 1st Year Student, Scholarship; Descriptive Anatomy, Prize; Chemistry, Prize.
1854. 2nd Year Student, Scholarship; Medicine, Prize; Materia Medica, Prize; Descriptive Anatomy, Hon. Cert.; Midwifery, Hon. Cert.; Surgery, Hon. Cert.; Physiology, Prize.
1855. 3rd Year Student, Scholarship; Surgery and Surgical Anatomy, Cheselden Medal; Forensic Medicine, Prize; Pathology, Prize; Practical Chemistry, Prize; Medicine, Hon. Cert.; Descriptive Anatomy, Hon. Cert.; Physiology, Prize; General Proficiency, Treasurer's Medal.
1856. Registrar, Prize.

Osborn (S.),‡ Brixton.
1870. Physical Society's 2nd Year's Prize.

Oughton (T.), London.
1858. Clinical Medical Assistant, 1st Prize.

Ozanne (C. H.), Guernsey.
1844. Descriptive and Surgical Anatomy, Prize.

Ozanne (J.), Guernsey.
1843. Physiology and Anatomy, Cheselden Medal; Comparative Anatomy, Hon. Cert.
1844. Medicine, Prize; Midwifery, 2nd Prize; Surgery, Hon. Cert.; Physical Society's Essay, Prize; Clinical Surgical Reports, Silver Medal.

Page (W. H.), Cheltenham.
s 1872. 1st Year Student, Hon. Cert.
w 1873. 3rd Coll. Prize.

Palmer (M. H. C.), Newbury, Berks.
1870. Physical Society's 2nd Year's Prize.
1872. Physical Society's 3rd Year's Prize.

Parsons (F.).
w 1882–3. 2nd Year, Prosector's Prize.

Pearce (G.), Salisbury.
1860. 1st Year Student, 2nd Coll. Prize.
1861. 2nd Year Student, 2nd Coll. Prize.

Peek (F. H.), Diss, Norfolk.
s 1872. 1st Year Student, 1st Coll. Prize.
w 1873. The William Tite Scholarship.
w 1874. 2nd Year Wm. Tite Scholarship.

Penberthy (J.), Redruth.
1854. 1st Year Student, Scholarship; Descriptive Anatomy, Prize; Chemistry, Hon. Cert.
1855. 2nd Year Student, Scholarship; Midwifery, Hon. Cert.; Botany, Prize; Descriptive Anatomy, Hon. Cert.

Pern (A.), Winchester, Hampshire.
1865. 1st Year Student, Hon. Cert.

Phillips (G. G.), Newcastle Emlyn.
1859. 2nd Year Student, Hon. Cert.
1860. 3rd Year Student, 3rd Coll. Prize.

Pickford (J. K.), Brixton.
w 1872. 1st Year Student, 3rd Coll. Prize.
s 1872. Hon. Cert.

Pietersen (J.), Cape of Good Hope.
w 1883–4. Solly Medal and Prize.

Pike (W. R.), Leicester.
1868. Physical Society's 1st Year's Prize.

Pike (J. B.), Leicester.
w 1872. 2nd Year Student, Hon. Cert.
w 1873. 3rd Year Student, Hon. Cert.

Plowman (R.), Bridgewater, Somst.
1862. 1st Year Student, Hon. Cert.
1863. 2nd Year Student, Hon. Cert.
1865. 3rd Year Student, Hon. Cert.

Pollard (F.), Taunton, Somerset.
1865. 1st Year Student, 2nd Coll. Prize.
1866. 2nd Year Student, 2nd Coll. Prize; Physical Society's 2nd Year's Prize.
1868. 3rd Year Student, 1st Coll. Prize; Physical Society's 3rd Year's Prize; Cheselden Medal.

Potter (H. P.), Denmark Hill.
w 1872. 1st Year Student, Hon. Cert.
s 1872. 3rd College Prize.
w 1873. 2nd Year Student, 2nd Coll. Prize; Prosector's Prize.
w 1874. 3rd Year Student, 1st Coll. Prize; Cheselden Medal; Hon. Cert. for Gen. Proficiency.
1875. Grainger Testimonial Prize.

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* Resident Medical Superintendent at Broadmoor Asylum.

† Examiner in Medicine, University of London. Physician to, and Joint Lecturer on Medicine at, St. Thomas's Hospital. Late Lecturer on Comparative Anatomy, Physiology, and Practical Physiology.

‡ Assistant Surgeon to the Hospital for Women, Soho Square. Late Surgical Registrar at St. Thomas's Hospital.

Poynder (G. F.), Clapham.
1872. Phys. Society's 1st Year's Prize.
1874. Phys. Society's 3rd Year's Prize.

Purkiss (A.), Kennington.
w 1875-6. 1st Year Student, Hon. Cert.
s 1876. Hon. Cert.

Purvis (J. P.), Blackheath.
1861. 1st Year's Student, Hon. Cert.; Matriculation Examination, Hon. Cert.
1862. 2nd Year Student, Hon. Cert.
1863. 3rd Year Student, Hon. Cert.

Rainbow (F.), Lower Norwood.
1864. 1st Year Student. Hon. Cert.
1865. 2nd Year Student, 3rd Coll. Prize.
1866. 3rd Year Student, 2nd Coll. Prize.

Rayner (H.),* Hythe, Kent.
1862. Matriculation Examination—Physics and Natural History, Hon. Cert.; 1st Year Student, 1st Coll. Prize.
1863. 2nd Year Student, 1st Coll. Prize.
1864. 3rd Year Student, Hon. Cert.; Hon. Cert. for the Cheselden Medal.

Relton (B.), Ealing.
1880. 2nd Entrance Science Scholarship.

Richardson (C. S.), Greenwich.
1851. Surgery, Hon. Cert.
1852. Midwifery, Prize.

Richardson (L.), Greenwich.
1848. General Pathology, Prize.

Ridge (J. J.), Horsleydown.
1864. 1st Year Student, The William Tite Scholarship.
1865. 2nd Year of Tite's Scholarship; Physical Society's 2nd Year's Prize; Prosector's Prize.
1866. The Grainger Testimonial Prize.
1868. 3rd Year Tite Scholarship; Hon. Cert. for Proficiency in Surgery and Surgical Anatomy; Treasurer's Gold Medal.

Robinson (H. B.), L. Norwood.
s 1881. 2nd Year Student, 1st Coll. Prize.

Roe (A. D.), Eccles.
w. 1880–81. 3rd Year Student, 2nd Coll. Prize.

Rogers (R. S.), Greenwich.
1843. Midwifery, First Prize; Clinical Medicine, Hon. Cert.

Rossiter (G. F.), Taunton.
1871. 1st Year Student, 1st Coll. Prize.
w 1872. 2nd Year Student, 2nd Coll. Prize.
s 1872. 1st Coll. Prize.
w 1873. 3rd Year Student, 3rd Coll Prize; Cheselden Medal; Treasurer's Gold Medal.

Rouse (R. E.), Woodbridge).
s 1880. 2nd Year Student, 3rd College Prize.

Rudall (J. T.), Crediton, Devon.
1853. Physiology, Hon. Cert.; Midwifery, Hon. Cert.; Medicine, Hon. Cert.; Surgery, Hon. Cert.

* Medical Superintendent Hanwell Asylum, and Lecturer on Psychology at St. Thomas's Hospital. Late Lecturer on Psychology at Middlesex Hospital.

Sandford (H. C.), Brixton.
w 1872. 1st Year Student, 1st Coll. Prize.
s 1872. 2nd College Prize.
w 1873. 2nd Year Student, 1st Coll. Prize.
s 1873. 3rd College Prize.
w 1874. 3rd Year Student, 2nd Coll. Prize; Treasurer's Gold Medal.

Saneyoshi (Y.), Tokio, Japan.
w 1881–2. 3rd Year Student, 1st. Coll. Prize.

Sankey (G. G.), Ashford, Kent.
1864. 3rd Year Student, 3rd Coll. Prize.

Saunders (G. M. C.), London.
1843. Midwifery, Hon. Cert.

Saunders (H. W.), London.
1867. 1st Year Student, 2nd Coll. Prize.
1868. Prosector's Prize.
1869. 3rd Year Student, 1st. Coll. Prize; Treasurer's Gold Medal; Physical Society's 3rd Year's Prize.

Saunders (W. S.), Camden Town.
1844. Midwifery, Hon. Cert.
1845. Medicine, Prize; Midwifery, Prize; Clinical Medicine, Prize.

Savill (T. D.), Brixton.
w 1875-6. 2nd Entrance Science Scholarship; 1st Year Student, The William Tite Scholarship.
s 1876. 3rd College Prize.
w 1876-7. 2nd Year Student, Hon. Cert.
s 1877. 2nd Year Student, 2nd Coll. Prize.

Scott (R. J.), Omagh, Tyrone.
1861. 1st Year Student, Hon. Cert.

Scutt (T.), Bere Regis.
w 1882–3. 3rd Year Student, 1st Coll. Prize.

Sedgwick (J.), Boroughbridge.
1854. Descriptive Anatomy, Hon. Cert.
1855. Surgery, Hon. Cert.; Midwifery, Hon. Cert.

Sedgwick (L. W.), Boroughbridge.
1848. Descriptive and Surgical Anatomy, Prize; Physiology and Anatomy, Prize; Medicine, Hon. Cert.; Midwifery Prize; Surgery, Prize;
1849. Physiology, 1st Prize; Midwifery, 1st Prize; Surgery, Prize; Medicine, 1st Prize; General Proficiency, Treasurer's Medal.

Sergeant (E.), Preston.
1870. 3rd Year Student, 3rd Coll. Prize; Cheselden Medal.

Sewell (E.), Little Oakley.
1848. Physiology and Anatomy, Hon. Cert.

Sharkey (S. J.),† Galway.
1874. Physical Society's 2nd Year's Prize.

† Assist.-Physician to, and Joint Lecturer on Pathological Anatomy and Demonstrator of Morbid Anatomy at, St. Thomas's Hospital.

Shaw (J.), Clapham Road.
w 1874-5. 1st Year Student, 1st Coll. Prize.
s 1875. 1st Coll. Prize.
w 1875-6. 2nd Year Student, 1st Coll. Prize.

Shea (H. G.), London.
1860. 1st Year Student, Hon. Cert.
1861. 2nd Year Student, Hon. Cert.
1862. 3rd Year Student, 2nd Coll. Prize.

Shea (J.), London.
1855. Midwifery, Hon. Cert.
1859. Midwifery, Hon. Cert.

Sheppard (C. E.), Kensington.
w 1873-4. 1st Year Student, 1st Coll. Prize.
s 1874. 1st Year Student, 2nd Coll. Prize.
w 1874-5. 2nd Year Student, 1st Coll. Prize.
s 1875. 1st Coll. Prize.
w 1875-6. 3rd Year Student, 2nd Coll. Prize; Physical Society's 2nd Year's Prize.
w 1876-7. 4th Year Student, the Treasurer's Gold Medal.
w 1877-8. Solly Medal and Prize, £20. Paper published in Hosp. Reports, Vol. VIII.

Sheppard (W. J.), Kensington.
w. 1880–81. 3rd Year Student, 3rd Coll. Prize.
w 1881-2. The Treasurer's Gold Medal.

Sherrington (C. S.), Caius Coll., Cambs.
w 1882-3. 6th Year, Grainger Testimonial Prize.

Shirtliff (E. D.), Kingston-on-Thames.
w 1882-3. 2nd Entrance Science Scholarship.

Siddall (J. B.),* Morton, Derby.
1862. 1st Year Student, Hon. Cert.
1863. 2nd Year Student, Hon. Cert.
1864. 3rd Year Student, Hon. Cert.; Hon. Cert. for the Cheselden Medal.

Simmons (H. B. M.), West Indies.
1849. Descriptive Anatomy, Hon. Cert.

Simon (M. F.), Blackheath.
1866. 1st Year Student, 1st Coll. Prize.
1869. 3rd Year Student, 3rd Coll. Prize; Prosector's Prize; Prize and Hon. Cert. for Surgery and Surgical Anatomy.

Sims (G. S.), Derby.
s 1881. 1st Year Student, 3rd Coll. Prize.

Sissons (W. H.), Hull.
1858. Matriculation Examination—Physics, &c., Prize.
1859. 2nd Year Student, Hon. Cert.; Clinical Medicine, Prize; Physical Society's Essay, Prize.
1860. 3rd Year Student, 2nd Coll. Prize; Physical Society's Prize.

Skinner (W.), Stockton-on-Tees.
1848. Botany, Hon. Cert.; Materia Medica, Hon. Cert.

Skipper (J.), Dalston, London.
1852. Midwifery, Hon. Cert.

Skipton (S. S.), East Indies.
1851. Midwifery, Hon. Cert.

* Late Physician to H.B.M. Legation, Japan.

Slater (J. S.), Bath.
1868. 1st Year Student, 1st Coll. Prize.
1869. Physical Society's 2nd Year's Prize.
1870. 3rd Year Student, 2nd Coll. Prize; Treasurer's Gold Medal.

Slaughter (C. H.), Farningham.
1855. Midwifery, Hon. Cert.

Slaughter (G. M.), Farningham.
1854. Midwifery, Hon. Cert.

Smith (H. U.), Reading.
w 1876-7. 4th Year Student, Cheselden Medal.

Smith (R. P.),† Belvedere.
s 1876. 2nd Year Student, 2nd College Prize.

Smyth (H. G.), Brondesbury.
w 1882-3. 1st Year Student, 3rd Coll. Prize.
s 1883. 1st Year Student, 1st Coll. Prize.
w 1883-4. 2nd Year Student, 1st Coll. Prize.

Snaith (F.), Boston, Lincolnshire.
1864. 3rd Year Student, Hon. Cert.

Solly (E.), Congleton.
w 1883-4. 2nd Year Student, 2nd Coll. Prize.

Sprakeling (R. J.), Canterbury.
1855. Midwifery, Hon. Cert.
1856. 2nd Year Student, Hon. Cert.; Clinical Medicine, Prize.

Stabb (E. C.), Ilfracombe.
w 1883-4. 2nd Year Student, Prosector's Prize.

Staddon (J. H.), London.
1858. Clinical Medicine, Prize.
1859. Clinical Medicine, Prize.

Stephens (J. N.), Walton-on-Thames.
w 1876-7. Physical Society's 1st Year's Prize.

Stephens (S. Sanders), Taunton.
1863. Physical Society's 2nd Year's Prize.

Stoddart (F. W.), Bristol.
w 1877-8. 1st Year Student, 1st Coll. Prize.

Stone (W. H.),‡ London.
1854. Matriculation Examination—Scholarship; 1st Year Student, Scholarship; Descriptive Anatomy, Hon. Cert.; Botany, Prize; Chemistry, Prize.
1855. 2nd Year Student, Scholarship; Forensic Medicine, Prize; Physical Society's Essay, Prize; Practical Chemistry, Prize; Medicine, Prize; Descriptive Anatomy, Hon. Cert.; Materia Medica, Prize; Physiology, Prize; Clinical Medicine, Mr. N. Smith's Prize.
1856. Clinical Medical Prize; General Proficiency, Treasurer's Medal.

† Resident Assistant-Physician to St. Thomas's Hospital.

‡ Examiner in Materia Medicia, Royal College of Physicians. Physician to, and Lecturer on Physics and Natural Philosophy, and on Materia Medica at, St. Thomas's Hospital; Late Assistant-Physician to the Hospital for Consumption, Brompton.

Summerhayes (H.), Crewkerne, Somersetshire.
1861. Matriculation Examination — Classics and Mathematics, President's Prize;
Modern Languages, &c., College Prize;
Physics and Natural History, College Prize;
The William Tite Scholarship.
1862. 2nd Year Tite's Scholarship.
1863. 3rd Year Tite's Scholarship; Treasurer's Gold Medal.

Summerhayes (W.), Crewkerne, Somersetshire.
1856. Matriculation Examination—Classics and Mathematics, Hon. Cert.;
Matriculation Examination—Modern Languages, Prize.

Sutcliff (E.), Camberwell.
1861. 1st Year, 3rd College Prize;
Matriculation Examination—Hon. Cert.
1863. 3rd Year Student, 3rd Coll. Prize.

Sutcliffe (J.), Ashton-under-Lyne.
1869. Prosector's Prize.

Swallow (J. D.), Reading.
1861. 2nd Year Student, Hon. Cert.

Sweeting (R. B.), Reading.
1853. 1st Year Student, Scholarship; Descriptive Anatomy, Hon. Cert.; Chemistry, Hon. Cert.
1854. 2nd Year Student, Scholarship; Midwifery, Prize.
1855. 3rd Year Student, Scholarship; Midwifery, Hon. Cert.; Clinical Medicine, Treasurer's Prize.

Sweeting (T.), Reading.
1855. Midwifery, Hon. Cert.

Takaki (Kanehiro), Kasumigaseki, Tokei, Japan.
w 1875-6. 1st Year Student, 3rd Coll. Prize.
s 1876. 2nd College Prize.
w 1876-7. 2nd Yr. Student, 1st Coll. Prize.
s 1877. 2nd Year Student, 3rd Coll. Prize.
w 1877-8. 3rd Year Student, 2nd Coll. Prize.
w 1878-9. 4th Year Student; "The Cheselden Medal;" The Treasurer's Gold Medal.

Talbot (G. T.), Kidderminster.
1848. Medical Reports, Dr. Roots' Prize.

Taylor (C. M.), Wrawby, Brigg.
1871. 1st Year Student, 2nd Coll. Prize.
w 1872. 2nd Year Student, 1st Coll. Prize.
w 1873. 3rd Year Student, 1st Coll. Prize; Surgery and Surgical Anatomy, Hon. Cert.

Taylor (S.),* Burton-on-Trent.
w 1872. 3rd Year Student, Hon. Cert.

Taylor (S. J.), Grantham.
s 1875. 1st Year Student, Hon. Cert.
w 1875-6. 2nd Year Student, The Musgrove Scholarship.
w 1876-7. 3rd Year Student, 2nd Year Musgrove Scholarship, and 1st College Prize.
w 1877-8. The Mead Medal; The Treasurer's Gold Medal.

Teanby (F. W.), Turnham Green.
1851. Practical Midwifery, Prize.
1852. Clinical Medicine, Junior Prize; Midwifery, Hon. Cert.

Thomas (L. M.), Camberwell.
1866. 1st Year Student, 3rd Coll. Prize.
1867. 2nd Year Student, 3rd Coll. Prize.
1869. 3rd Year Student, 2nd Coll. Prize; Cheselden Medal.

Thomas (W. L.), Neath, Glamorgan.
1845. Chemistry, Prize; Materia Medica, Prize.
1847. Medicine, Hon. Cert.; Physiology and Anatomy, Prize; Physical Society's Essay, Prize.

Thompson (F. H.), Tenbury.
1870. Prosector's Prize.

Thudichum (G. D.), Kensington.
w 1878-9. Physical Society's 2nd Year's Prize.

Timothy (P. V.), London.
1851. Practical Midwifery, Prize; Midwifery, Hon. Cert.

Todd (A. J. M.), Gravesend.
w 1863. 1st Year Student, 2nd Coll. Prize.
w 1864. Prosector's Prize.

Tomson (K.), Luton, Beds.
1842. Materia Medica Prize.
1843. Medicine, Prize; Clinical Medicine, Hon. Cert.

Tomson (W. B.), Luton, Beds.
w 1879-80. 1st Year Student, 2nd Coll. Prize.
s 1880. 1st Year Student, 2nd Coll. Prize.
w 1880-81. 2nd Year Student, The Musgrove Scholarship, Prosector's Prize.
w 1881-2, 3rd Year Student, 2nd Coll. Prize; 2nd Tenure of Musgrove Scholarship.
s 1882. 2nd Coll. Prize.
w 1882-3. Treasurer's Gold Medal.

Totsuka (K.), Tokei, Japan.
s 1882. 1st Year Student, 2nd Coll. Prize.
w 1882-3. 2nd Year Student, ½ Musgrove Scholarship and 1st Coll. Prize combined.
w 1883-4. 3rd Year Student, 2nd tenure of ½ Musgrove Scholarship, with 3rd College Prize.

Trend (H. G.), Bridgewater.
1853. Practical Midwifery, Prize; Midwifery, Hon. Cert.
1854. Midwifery, Hon. Cert.; Clinical Medicine, Treasurer's Prize.

Treves (W. K.), Dorchester.
1863. Matriculation Examination—Physics and Natural History, Hon. Cert.; and
Modern Languages and Modern History, College Prize and Hon. Cert.;
1st Year Student, Hon. Cert.
1865. 3rd Year Student, 2nd Coll. Prize; Prosector's Prize.

* Physician North London Hospital for Consumption; Demonstrator of Anatomy, St. Thomas's Hospital.

Tyrrel (W.), Richmond.
1851. Descriptive Anatomy, Hon. Cert.
1852. Medicine, Hon. Cert.; Surgery, Hon. Cert.
1853. Forensic Medicine, Hon. Cert.; Ophthalmic Essay, Mr. Dixon's Prize.
1854. Surgical Reports, President's Prize.

Vardy (J. L.), London.
1854. Midwifery, Hon. Cert.
1855. Practical Midwifery, Prize.

Verdon (H. W.), Eccles.
2nd Year Student, Hon. Cert.

Wagstaffe (W. W.),* Kennington.
1862. Matriculation Examination—Classics and Mathematics, President's Prize.
Physics and Natural History, College Prize;
Modern Languages, &c., College Prize;
1st Year Student, Treasurer's Prize;
1863. 2nd Year Student, 1st. Coll. Prize.
1864. 3rd Year Student, 1st Coll. Prize; Physical Society's 3rd Year's Prize; Cheselden Medal; Treasurer's Gold Medal.

Walker (R.), Kendal.
1854. Descriptive Anatomy, Hon. Cert.; Midwifery, Hon. Cert.
1855. Midwifery, Hon. Cert.

Waller (A.), Islington.
1864. 1st Year Student, 1st Coll. Prize.
1865. 2nd Year Student, 1st Coll. Prize.
1866. 3rd Year Student, 1st Coll. Prize; Physical Society's 3rd Year's Prize; Treasurer's Gold Medal.

Waller (C. B.), London.
1860. 2nd Year Student, Hon. Cert.

Ward (F. H.),† Scarboro'.
1863. 1st Year Student, Treas. Prize.
1864. 2nd Year Student, 1st Coll. Prize; Physical Soc. 2nd Year's Prize.
1865. 3rd Year Student, 1st Coll. Prize; Physical Soc. 3rd Year's Prize; Cheselden Medal; Treasurer's Gold Medal.

Watson (F.), Nottingham.
1859. 1st Year Student, Hon. Cert.; Matriculation Examination—Physics, &c., Prize.

Way (F. W.), Fratton, Portsmouth.
1853. Descriptive Anatomy, Hon. Cert.; Chemistry, Hon. Cert.;
1854. Midwifery, Hon. Cert.; Surgery, Hon. Cert.

Way (J. P.), Portsmouth.
1861. 1st Year, Hon. Cert.

* Late Assistant Surgeon to, and Joint Lecturer on Anatomy at, St. Thomas's Hospital. Late Member of the Board of Examiners, Royal College of Surgeons.
† Assistant Medical Officer, Wandsworth Lunatic Asylum.

Webber (W. W.), Crewkerne.
w 1876-7. 1st Year Student, 3rd Coll. Prize.

Webster (E.), Lee.
w 1883-4. 1st Year Student, 1st Coll. Prize.

Webster (H.), Dulwich.
1851. Matriculation Sch., Hon. Cert.; Descriptive Anatomy, Hon. Cert.
1852. Botany, Hon. Cert.
1853. Midwifery, Hon. Cert.

Weekes (F. H.), Southampton.
w 1873-4. 1st Year Student, 3rd Coll. Prize.
s 1874. 3rd Coll. Prize.
w 1874-5. 2nd Year Student, 2nd Coll. Prize.
s 1875. 3rd Coll. Prize.
w 1875-6. 3rd Year Student, 3rd Coll. Prize.

Wells (A. E.), Brixton.
w 1877-8. 1st Year Student, 2nd Entrance Science Scholarship.

West (J. F.) ‡
1853. Midwifery, Hon. Cert.
1854. Forensic Medicine, Hon. Cert.; Pathology, Hon. Cert.
1855. Ophthalmic Reports, Prize.

Wheaton (F. D. W.), Honiton.
1845. Practical Midwifery, Hon. Cert.

Whitehead (J.), Preston.
1861. 1st Year, Hon. Cert.
1862. 2nd Year Student, 3rd Coll. Prize.
1863. 3rd Year Student, 2nd Coll. Prize.

Wiles (J.), Hitchin, Herts.
1850. Physiology, Hon. Cert.
1851. (Accoucheur) Midwifery, Prize.

Williams (H.), Longley, near Gloucester.
1868. 1st Year Student, 2nd Coll. Prize.
1869. 2nd Year Student, 3rd Coll. Prize.

Williams (J.), Westerleigh Bristol.
1855. 1st Year Student, Scholarship; Midwifery Prize; Botany, Prize; Chemistry, Hon. Cert. Descriptive Anatomy, Prize. Materia Medica, Hon. Cert.
1856. 2nd Year Student, Treas. 1st Prize.
1857. 3rd Year Student, Hon. Cert. General Proficiency, Treasurer's Medal.

Williams (J.), Doncaster.
1858. 1st Year Student, Hon. Cert.
1859. 2nd Year Student, Hon. Cert. Clinical Medicine, Prize.
1860. 3rd Year Student, Hon. Cert.

Williams (P. H.), Monmouth.
s 1872. 1st Year Student, Hon. Cert.

Williams (P. M. G.), Newcastle Emlyn.
1864. Practical Midwifery, Prize.

‡ Late Surgeon to Queen's Hospital, and Professor of Clinical Surgery at Queen's College, Birmingham.

WILLIAMS (R. M.) Beaumaris.
1880. 1st Entrance Science Scholarship.

WILLIAMS (W. R.),* Nottingham.
1856. Matriculation Examination in Classics, Mathematics, Hon. Cert.

WILLIAMSON (R. J.), Ripon.
w 1876–7. 1st Entrance Sc. Scholarship.

WITHERBY (W. H.), Croydon.
1858. Matriculation Examination in Modern Languages, Prize.

WOAKES (E.), Luton, Beds.
1856. 1st Year Student, Hon. Cert.
1857. 2nd Year Student, 2nd Prize; Clinical Medical Prize.
1858. Essay on Neuralgia, Mr. N. Smith's Prize;
Surgical and Medical Anatomy, Cheselden Medal.

WOOD (G. J.), London.
1863. Descriptive Anatomy, Hon. Cert.

* One of H. M. Commissioners in Lunacy, late Resident Physician to Bethlehem Royal Hospital; late Lecturer on Mental Diseases at St. Thomas's Hospital.

WOOD (R. H.), Loughborough, Leicester.
1854. Descriptive Anatomy, Hon. Cert.
1855. Surgery, Hon. Cert.; Midwifery, Prize; Medicine, Hon. Cert.; Descriptive Anatomy, Prize; Physiology, Hon. Cert.
1856. Physical Society's Essay, Prize.

WOODHOUSE (T. J.), London.
1855. Chemistry, Hon. Cert.; Materia Medica, Hon. Cert.

WOODMAN (W. E.), Camberwell.
s 1875. 1st Year Student, 2nd Coll. Prize.

WOTTON (H. G.)
1855. Midwifery, Hon. Cert.
1856. Midwifery, Hon. Cert.

WRENCH (E. M.), Cornhill.
1851. Descriptive Anatomy, Hon. Cert.; Physical Society's Essay, Treasurer's 1st Year's Prize;
1852. Physiology, Hon. Cert.

WYMAN (W. S.), Kettering, Northampton.
1852. Matriculation Examination Scholarship.

All old Students of St. Thomas's Hospital are requested to send their *present* addresses to The Medical Secretary, *St. Thomas's Hospital, Albert Embankment, Westminster Bridge, S.E.*

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